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ABSTRACT

The current economic relationships between a university and its local community are documented by many diverse studies. This bibliography spans a period from 1958 to 1974 and contains 74 items. Section I presents detailed information on the distribution of spending by students, faculty, and staff to illustrate the consistency with which expenditures are made. Section II, background studies, contains bibliographies, theoretical studies, procedural studies, and general studies. Section III, on special purpose studies includes items on student expenditures, foreign and out-of-state students, tax and tax-exemption studies, employment multipliers, and health science studies. Section IV, on general economic impact, includes items on the economic relationships that did not use the American Council on Education methodology, those that did use the methodology, and studies completed by the University of California campuses. Three indexes are provided to facilitate the use of the bibliography: individual and corporate authors, institutions represented in this bibliography, and the states, regions, and cities covered in the studies. (JMF)

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The Economic Impact of Institutions of Higher Education on Local Communities: An Annotated Bibliography

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Ira Stephen Fink

The Economic Impact of Institutions of Higher Education on Local Communities: An Annotated Bibliography

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THE ECONOMIC IMPACT OF
INSTITUTIONS OF HIGHER EDUCATION
ON LOCAL COMMUNITIES:
AN ANNOTATED BIBLIOGRAPHY

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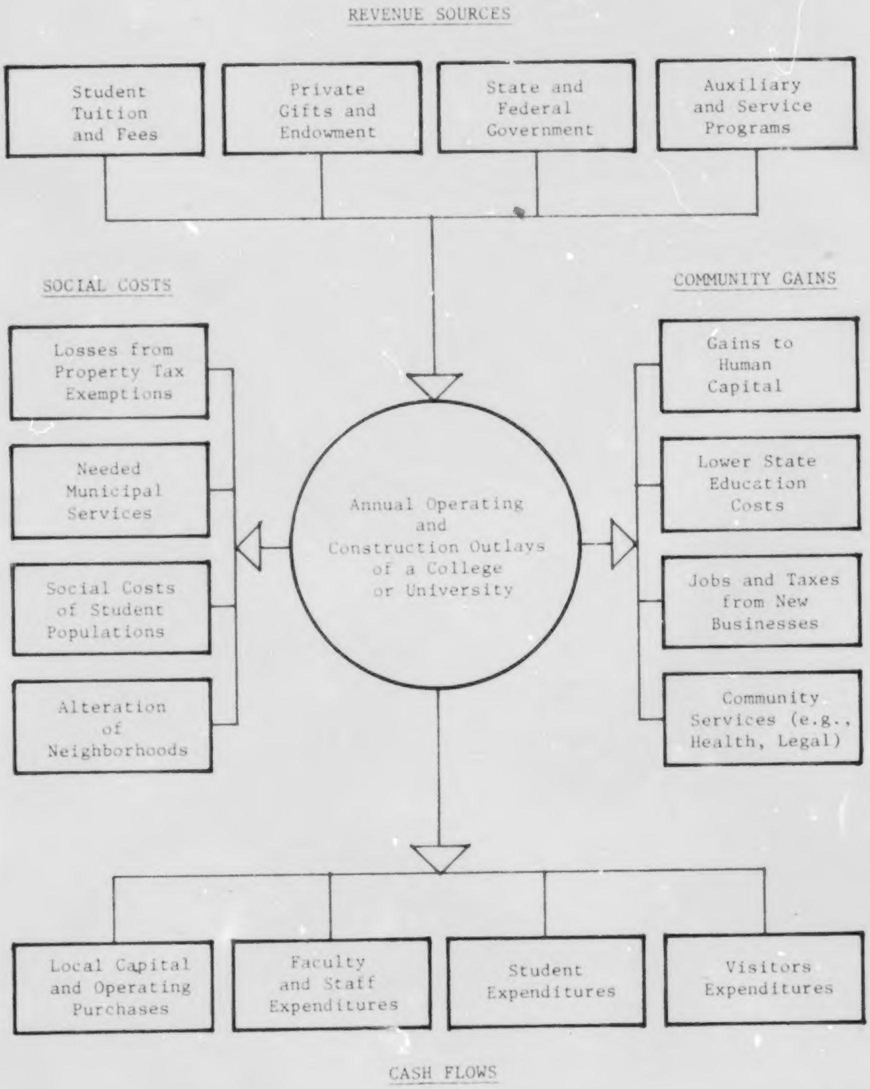
Introduction

The components of economic relationships between institutions and communities are diverse, as shown in the figure on the following page. In an attempt to quantify these relationships, dozens of institutions have comprehensively studied their economic impact on the local economy. Some have analyzed the spending patterns of their students, faculty and staff while some have measured tax relationships, effects of foreign students, and employment multipliers. Collectively these studies constitute a significant body of literature on the subject of the economic relationship between a university and its local community.

The purpose of this bibliography is to document the many diverse studies. It is a companion volume to two earlier bibliographies published by this office in 1971 and 1972 on the general subject of campus/community relationships. These earlier bibliographies are cited as Items 1 and 2 on page 13 of this report. This current economic relationships bibliography spans a period from 1958, the date of the earliest study included, to 1974, the date of the latest. As noted in the citations, many of the studies are out-of-print and are no longer available.

Section I of this bibliography presents detailed information on the distribution of spending by students, faculty and staff to illustrate the consistency with which expenditures are made. Following the section

MAIN COMPONENTS IN THE ECONOMIC RELATIONSHIP
BETWEEN A UNIVERSITY AND ITS LOCAL COMMUNITY


REVENUE SOURCES
Student Tuition and Fees
Private Gifts and Endowment
State and Federal Government
Auxiliary and Service Programs
SOCIAL COSTS
Losses from Property Tax Exemptions
Needed Municipal Services
Social Costs of Student Populations
Alteration of Neighborhoods
Annual Operating and Construction Outlays of a College or University
COMMUNITY GAINS
Gains to Human Capital
Lower State Education Costs
Jobs and Taxes from New Businesses
Community Services (e.g., Health, Legal)
Local Capital and Operating Purchases
Faculty and Staff Expenditures
Student Expenditures
Visitors Expenditures
CASH FLOWS

Source: Adapted from The Economic Impact of Colleges and Universities in the Boston Area, prepared by the SDL System Research Group. Toronto, Canada: February 1974. Figure B.1, page 86. (Bibliography Item 67).

on student, faculty and staff expenditures, the 74 items in this bibliography are grouped together in three major sections: Section II, Background Studies, Section III, Special Purpose Studies; and Section IV, General Economic Impact Studies. Each section in turn is further divided into chapters of specifically related studies containing extensive annotations of the cited reports. Preceeding each chapter is a further note on the content of the chapters.

The section on General Background Studies is divided into chapters on bibliographies (Items 1-2), theoretical studies (Items 3-7), procedural studies (Items 8-9), and general studies (Items 10-13).

The section on Special Purpose Studies includes chapters on student expenditures (Items 14-21), foreign and out-of-state students (Items 22-24), tax and tax-exemption studies (Items 25-28), employment multipliers (Items 29-32), and health science studies (Items 33-34).

The section on General Economic Impact Studies has three chapters. The first includes studies of economic relationships that did not use the American Council on Education (ACE) methodology (Items 35-51); the second includes only studies that followed the ACE format (Items 52-67); the final chapter includes those studies completed by campuses of the University of California (Items 68-74).

To facilitate using the bibliography there are three indexes at the end. One lists individual and corporate authors, one lists the institutions represented in this bibliography, and one lists the states, regions, and cities covered in the studies.

Although one might have hoped that the studies of economic relationships in a bibliography such as this would have originated from the perspective of issues in university community interactions, most of the studies simply accounted for cash flows between the institution and the community. The questions of tax-exempt land, payments for municipal-type services, economic benefits resulting from tax subventions due to the population impact of institutions, and the general inflow of funds into a community were all study areas that could have provided useful added insights into the economic relationship question, yet only a few of the studies contained this information.

The translation of the economic relationships into spatial and physical relationships was also an area that lacked review; too few reports included useable market data to assist those who provide goods and services in becoming more responsive to the changing needs and demands of students, faculty and staff groups. In general, most of the economic impact studies had limited physical planning usefulness. The question of "how much was spent" appeared to be more important than where the expenditures took place, for what, and why they increased or decreased.

A number of other observations can also be made about the studies in this bibliography.

First, there was considerable variation in the quality and quantity of output. Studies that at the outset appeared to have the same objectives were, upon completion, quite different. The number and importance of items studied, method of formulation of each study, and presentation of results varied considerably. The lack of consistency makes comparison between institutions more difficult.

Second, many of the studies, rather than being objective observations, tended to be public relation efforts or rationalizations for the presence of the institution. While some attempt was made to provide a balance between the positive and negative economic impacts, the surveys were generally weighted in favor of the positive impact. A few studies, such as those by Winona State College (Item 37), Fort Hays Kansas State College (Item 55), and the University of Pittsburgh (Item 56), that provided examples of real estate taxes foregone or impact on school districts were noteworthy exceptions.

Third, many of the studies that followed the ACE Survey Manual models and provided linear cash flow formulas did not account for university-induced changes in the tempo of economic activity, nor did they provide long-range forecasts. They did, however, have format consistency. The biggest drawback in most of these studies was that they were short-term, measuring economic activity as an accounting procedure rather than as a measure of relationships.

Fourth, a few of the studies that followed the ACE Survey Manual benefited because additional topic areas were added to the format. For example, the studies by the University of Virginia (Item 60), the University of Colorado (Item 66), and the University of California, Santa Barbara (Item 74), all reviewed the propensity of business and industry to locate in the university community area as a result of the presence of the institution, whereas the University of Kansas at Pittsburg study (Item 58) reviewed the potential economic loss to the city due to decreasing enrollments.

Fifth, sufficient economic data were available so that institutions willing to rely upon secondary sources could conduct economic studies at very little cost. The study by the University of California, Riverside (Item 71) was one such example; for its limited cost, its utility was quite high. The study by the University of Washington (Item 50) was another example of this sort.

Sixth, although economic accountability was the theme of many of the reports, only the report by the University of California, Santa Barbara (Item 74) described how much it cost to undertake the study.

Finally, only a few of the studies contained information on both institutional and personal income sources in the same detail as expenditures. Both are needed to complete a study of economic relationships.

Notwithstanding the above, the studies are useful as a starting point in understanding the complex economic relationships between institutions and their host communities. On the one hand, the studies provide a means to balance statements by those on both a state-wide and community level who protest the costs of campuses; at the same time, the studies serve to expand the knowledge base about the economics of education.

This bibliography is one of a series of reports prepared by this office and concerned with the social, economic, physical and environmental effect of university campuses on their adjacent communities. A complete list of these publications is shown on the inside back cover. The data for Section I on student, faculty and staff expenditures were prepared by Ms. Vicki Schulkin. The production and typing of the report were completed by Mrs. Elena Zekos, Ms. Sheryl Elam, and Ms. Ellen Tsue.

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May 1976

I. Distribution of Expenditures by Students, Faculty and Staff

How do students, faculty and staff spend their income? To help answer this question, the following two tables on pages 5 through 10 describe average student, faculty and staff expenditures.

The information on average student expenditures (Table 1) was extracted from thirteen different economic impact surveys conducted by twelve colleges and universities during the period from 1964 through 1973; all are studies listed in this bibliography. The average faculty and staff expenditures (Table 2) were taken from seven different surveys which are also listed in this bibliography.

Because each of the cited surveys had different purposes and methods, each used a wide variety of budget divisions to measure expenditures. To overcome the lack of a consistent pattern of major expenditure headings, a new and simplified set of eleven major expenditure headings was developed for use in the tables in this bibliography. When feasible, the categories used in the original studies were preserved, and data interpretation was minimized, but when necessary the data have been rearranged to fit simplified categories more commonly associated with expenditure budgets. In addition, all expenditures have been translated into percentage terms to allow for easier comparison. Additionally, footnotes appearing at the end of the tables further amplify the decision process used in placing the expenditures in categories.

As noted in the tables, categories amounting to less than one-half percent have been omitted entirely. Asterisks on the tables indicate that the category was not used.

Because it was not always possible to fully understand the components of any given expenditure category used or reported in a survey (unless the survey was quite specific), there may be some breakdown in the consistency of the results. For example, when "laundry and cleaning" categories are listed separately under "personal services," personal services would be increased by two to three percent of expenditure. This implies that in the surveys that did not separate laundry expense this percentage of expenditure was hidden in some other grouping of expenses.

Moreover, although original published study results were used, they were not escalated or inflated to a current expenditure index.

Despite the varying study approaches, there is a surprising amount of uniformity in the percentage distributions of expenditures, making the task of forecasting much easier. For example, as shown in Table 1, while the money spent by students for housing at the campuses varied from 11 to 46 percent of their expenses and that spent on food varied from 16 to 31 percent, the combined total for housing and food varied only from 38 to 57 percent of student expenses. The average of student expenditures for housing in all thirteen studies combined was 23 percent, and the average for food was also 23 percent (14 percent was spent for food at home and 9 percent for food in restaurants).

Direct student expenditures for education (including tuition and fees) were, on the average, 7 percent of total student expenditures. The same percentage, 7 percent, was spent for clothing. Students used 13 percent of their budgets for transportation and automobile related expenses and 9 percent for recreation and entertainment.

The remainder of student expenses was divided into personal services (3 percent), professional services (1 percent), financial expenses (2 percent) and miscellaneous expenses such as books and supplies, charity and gifts (12 percent).

Surprisingly and as shown in Table 2, average faculty and staff expenditures were quite similar to student expenses for housing and food. Based upon seven separate studies, the average faculty/staff family spent 23 percent of their income for housing and 24 percent for food (divided into 19 percent for food at home and 5 percent for food in restaurants).

Other areas of faculty/staff expenses were not similar to student expenses. On the average, faculty/staff families spent 1 percent for education, 11 percent for clothing, and 15 percent for transportation and automobile expenses. Recreation and entertainment accounted for 5 percent of faculty/staff expenses while 1 percent was spent on personal services, 2 percent on professional services, and 5 percent on financial services. The figure for savings and investments, 2 percent, is low because it was only measured in four of the seven studies. The remaining 11 percent of faculty/staff budgets were used on a number of miscellaneous goods and services.

TABLE 1
AVERAGE STUDENT EXPENDITURE PATTERNS

		Appalachian State University		Bemidji State College		Eastern Montana College		Idaho State University		Idaho State University	
I.	BACKGROUND										
A.	Bibliog. Ref. Number (Source Doc.)[a]	47		21		18		16		19	
B.	Year Study Undertaken	1970-71		1972-73		1971-72		1969-70		1971-72	
C.	Avg. Total Student Expend. (Annual)			-		-		-		-	
D.	Avg. Total Student Expend. (9 mos.)	$1,341[b]		$2,416		$3,479		$3,244		$3,575	
E.	Campus Enrollment at Year of Study	6,049		4,237		3,202		5,762		5,910	
F.	Study Sample Size (N)	248		-		126		468		302	
II.	DISTRIBUTION OF EXPENDITURES BY %										
A.	HOUSING	23%			-	32%		30%		31%	
	1. Rent (or Mortgage Payment)		16		-		18		19		20
	2. Utilities		4		-		5		11		11
	3. Furnishings		3	46%	-		9				
	4. Maintenance		-		-		-		-		-
B.	FOOD AND BEVERAGES	29			-	22		16		19	
	1. At Home		-		-		13		11		12
	2. In Restaurants		-		-		9		5		7
C.	EDUCATION	-		21		15		11		11	
	1. Tuition/Fees		-		21		15		11		11
	2. Other Education		-		-		-		-		-
D.	CLOTHING	8			-	5		6		7	
E.	TRANSPORTATION AND AUTOMOTIVE	11		7		8		13		12	
	1. Public Transportation		-		-		-		3		3
	2. Automobile Oper. and Service		11		-		8[e]		10		9
	3. Purchases (auto, boat, etc.)		-		-		-		-		-
F.	RECREATION AND ENTERTAINMENT	8		-		2		6		5	
G.	PERSONAL SERVICES	6		-		2		3		3	
H.	PROFESSIONAL SERVICES	-		-		2		3		2	
I.	FINANCIAL	-		-		-		-		1	
	1. Payments on Consumer Loans		-		-		-		-		-
	2. Insurance		-		-		-		-		-
	3. Property Tax		-		-		-		-		1
	4. Interest		-		-		-		-		-
J.	SAVINGS AND INVESTMENTS	-		-		-		-		-	
K.	OTHER MISCELLANEOUS	15		26		12		12		9	
	1. Other Goods		6		-		-		2		2
	2. Other Services		-		-		-		-		-
	3. Books and Supplies		8		7		4		4		3
	4. Charity and Gifts		1		-		2		3		2
	5. Other Miscellaneous		-		19[d]		6		3		2
L.	TOTAL	100%		100%		100%		100%		100%	

Note: Categories amounting to less than 1/2 percent have been omitted entirely. A dash(-) indicates the category was not surveyed.

TABLE 1 (contd.)
AVERAGE STUDENT EXPENDITURE PATTERNS

		Jacksonville University		Kansas State College of Pittsburg		Northern Michigan University		Rutgers		University of Arizona	
I.	BACKGROUND										
A.	Bibliog. Ref. Number (Source Doc.)[a]	45		58		39		36		14	
B.	Year Study Undertaken	1967[f]		1972-73		1964-65		1959[f]		1967-68	
C.	Avg. Total Student Expend. (Annual)	-		-		-		$2,023[b]		-	
D.	Avg. Total Student Expend. (9 mos.)	$1,498[bg]		$1,122[b]		$1,127[b]		-		$3,607	
E.	Campus Enrollment at Year of Study	2,600		5,208[h]		3,556		8,630		18,160	
F.	Study Sample Size (N)	234		1,041[i]		1,011		1,275		-	
II.	DISTRIBUTION OF EXPENDITURES BY %										
A.	HOUSING	-		25%		11%		12%		17%	
	1. Rent (or Mortgage Payment)		-		18		6		5		-
	2. Utilities		-		5		2		2		-
	3. Furnishings		-		2		2		4		-
	4. Maintenance		-		-		1		1		-
B.	FOOD AND BEVERAGES	23%		23		31		26		22	
	1. At Home		-		-		21		11		-
	2. In Restaurants		-		-		10[j]		15		-
C.	EDUCATION	-		-		2		11		19[l]	
	1. Tuition/Fees		-		-		-		-		-
	2. Other Education		-		-		2		11[k]		-
D.	CLOTHING	15		10		7		9		8	
E.	TRANSPORTATION AND AUTOMOTIVE	17		15		20		14		10	
	1. Public Transportation		-		-		1		2		-
	2. Automobile Oper. and Service		-		10		8		4		-
	3. Purchases (auto, boat, etc.)		-		5		11		8		-
F.	RECREATION AND ENTERTAINMENT	13		14		10		7		8	
G.	PERSONAL SERVICES	-		-		7[c]		6[c]		4	
H.	PROFESSIONAL SERVICES	4		-		-		3		3	
I.	FINANCIAL	-		2		6		7		3	
	1. Payments on Consumer Loans		-		-		2		1		-
	2. Insurance		-		-		4		4		3
	3. Property Tax		-		-		-		2		-
	4. Interest		-		2		-		-		-
J.	SAVINGS AND INVESTMENTS	-		-		3		-		-	
K.	OTHER MISCELLANEOUS	28		14		3		5		6	
	1. Other Goods		14		-		-		-		-
	2. Other Services		-		-		-		-		-
	3. Books and Supplies		-		-		1		3		1
	4. Charity and Gifts		-		-		2		2		4
	5. Other Miscellaneous		14		-		-		-		1
L.	TOTAL	100%		100%		100%		100%		100%	

Note: Categories amounting to less than 1/2 percent have been omitted entirely. A dash(-) indicates the category was not surveyed.

TABLE I (contd.)
AVERAGE STUDENT EXPENDITURE PATTERNS

	University of South Florida		University of Wisconsin		West Virginia University		Average of Thirteen Studies (Student Expenditures)		
I. BACKGROUND									
A. Bibliog. Ref. Number (Source Doc.)[a]	46		54		48				
B. Year Study Undertaken	1968-69		1970-71		1970-71[a]			-	
C. Avg. Total Student Expend. (Annual)		-		-		-		-	
D. Avg. Total Student Expend. (9 mos.)	$ 704[b]		$2,320[b]		$1,787[b]		$2,172		
E. Campus Enrollment at Year of Study	9,695[m]		35,549			-		-	
F. Study Sample Size (N)		-	206			-		-	
II. DISTRIBUTION OF EXPENDITURES BY %		[n]							
A. HOUSING	17%		34%		46%		23%		
1. Rent (or Mortgage Payment)		-		27		46		17	
2. Utilities		-		6		-		3	
3. Furnishings		-		1		-		3	
4. Maintenance		-		-		-		0	
B. FOOD AND BEVERAGES	30		23		18		23		
1. At Home		-		16		-		14	
2. In Restaurants		-		7		-		9	
C. EDUCATION	-		-		-		7		
1. Tuition/Fees		-		-		-		6	
2. Other Education		-		-		-		1	
D. CLOTHING	14		5		3		7		
E. TRANSPORTATION AND AUTOMOTIVE	12		10		14		13		
1. Public Transportation		-		-		-		1	
2. Automobile Oper. and Service		-		5		14		9	
3. Purchases (auto, boat, etc.)		-		5		-		3	
F. RECREATION AND ENTERTAINMENT	27		3		13		9		
G. PERSONAL SERVICES	-		4[p]		1		3		
H. PROFESSIONAL SERVICES	-		-		-		1		
I. FINANCIAL	-		3		-		2		
1. Payments on Consumer Loans		-		-		-		0	
2. Insurance		-		2		-		1	
3. Property Tax		-		-		-		0	
4. Interest		-		1		-		1	
J. SAVINGS AND INVESTMENTS	-		-		-		0		
K. OTHER MISCELLANEOUS	-		18		5		12		
1. Other Goods		-		13		5		4	
2. Other Services		-		2		-		0	
3. Books and Supplies		-		-		-		3	
4. Charity and Gifts		-		1		-		1	
5. Other Miscellaneous		-		2		-		4	
L. TOTAL	100%		100%		100%		100%		

Note: Categories amounting to less than 1/2 percent have been omitted entirely. A dash(-) indicates the category was not surveyed.

TABLE 2
AVERAGE FACULTY/STAFF
EXPENDITURE PATTERNS

		Kansas State College Faculty/Staff Combined		Northern Michigan University Faculty/Staff Combined		Portland State College Faculty		Portland State College Staff		Portland State College Faculty/Staff Combined	
I.	BACKGROUND										
A.	Bibliog. Ref. Number (Source Doc.)[a]	58		39		38		38		38	
B.	Year Study Undertaken	1972-73		1964-65		1965		1965		1965	
C.	Average Annual Expenditures	-		$7,076		-		-		-	
D.	Size of Faculty and/or Staff	-		487[r]		-		-		-	
E.	Study Sample Size	-		132		t		t		t	
F.	Campus Enrollment at Year of Study	-		-		-		-		-	
II.	DISTRIBUTION OF EXPENDITURES BY %										
A.	HOUSING	16%		20%		27%		26%		27%	
	1. Rent (or Mortgage Payment)		5		9[s]		18[u]		18[u]		18[u]
	2. Utilities		7		5		-		-		-
	3. Furnishings		4		4		9		8		9
	4. Maintenance		-		2		-		-		-
B.	FOOD AND BEVERAGES	27		25		26		29		27	
	1. At Home		-		22		-		-		-
	2. In Restaurants		-		3		-		-		-
C.	EDUCATION	-		1		-		-		-	
	1. Tuition/Fees		-		-		-		-		-
	2. Other Education		-		1		-		-		-
D.	CLOTHING	8		4		13		12		13	
E.	TRANSPORTATION AND AUTOMOTIVE	15		17		15		15		15	
	1. Public Transportation		-		1		-		-		-
	2. Automobile Oper. and Service		7		4		15		15		15
	3. Purchases (auto, boat, etc.)		8		12		-		-		-
F.	RECREATION AND ENTERTAINMENT	5		3		5		5		5	
G.	PERSONAL SERVICES	-		4		-		-		-	
H.	PROFESSIONAL SERVICES	-		4		6		6		5	
I.	FINANCIAL	7		15		-		-		-	
	1. Payments on Consumer Loans		-		7		-		-		-
	2. Insurance		-		6		-		-		-
	3. Property Tax		-		2		-		-		-
	4. Interest		7		-		-		-		-
J.	SAVINGS AND INVESTMENTS	-		3		-		-		-	
K.	OTHER MISCELLANEOUS	22		4		8		7		8	
	1. Other Goods		-		-		-		-		-
	2. Other Services		-		-		-		-		-
	3. Books and Supplies		-		1		-		-		-
	4. Charity and Gifts		-		3		-		-		-
	5. Other Miscellaneous		-		-		-		-		-
L.	TOTAL	100%		100%		100%		100%		100%	

Note: Categories amounting to less than 1/2 percent have been omitted entirely. A dash(-) indicates the category was not surveyed.

TABLE 2 (contd.)
AVERAGE FACULTY/STAFF
EXPENDITURE PATTERNS

	Rutgers Faculty		Rutgers Staff		Rutgers Faculty/Staff Combined		University of South Florida Faculty		University of South Florida Staff		University of South Florida Faculty/Staff Combined	
I. BACKGROUND												
A. Bibliog. Ref. Number (Source Doc.)[a]	36		36		36		46		46		46	
B. Year Study Undertaken	1959		1959		1959		1968-69		1968-69		1968-69	
C. Average Annual Expenditures	$6,788		$6,688		$6,737		$14,750		$5,600		$7,863	
D. Size of Faculty and/or Staff	1,338		1,372		2,711		608		1,081		1,689	
E. Study Sample Size	569		342		911		-		w		-	
F. Campus Enrollment at Year of Study	-		-		-		-		-		-	
II. DISTRIBUTION OF EXPENDITURES BY %												
A. HOUSING	26%		[illegible]		25%		24%		30%		26%	
1. Rent (or Mortgage Payment)		14[a]		11[a]		12[a]		-		-		-
2. Utilities		4		5		4		-		-		-
3. Furnishings		6		5		6		-		-		-
4. Maintenance		2		3		3		-		-		-
B. FOOD AND BEVERAGES	23		25		25		20		24		21	
1. At Home		18		19		19		-		-		-
2. In Restaurants		5		6		6		-		-		-
C. EDUCATION	4		3		3		-		-		-	
1. Tuition/Fees		-		-		-		-		-		-
2. Other Education		4		3		3		-		-		-
D. CLOTHING	5		6		5		18		18		18	
E. TRANSPORTATION AND AUTOMOTIVE	13		13		13		15		13		15	
1. Public Transportation		1		1		1		-		-		-
2. Automobile Oper. and Service		5		5		5		15		13		15
3. Purchases (auto, boat, etc.)		7		7		7		-		-		-
F. RECREATION AND ENTERTAINMENT	5		5		5		Included under "other miscellaneous"					
G. PERSONAL SERVICES	4		4		4		-		-		-	
H. PROFESSIONAL SERVICES	4		4		4		-		-		-	
I. FINANCIAL	12		12		12		-		-		-	
1. Payments on Consumer Loans		3		4		3		-		-		-
2. Insurance		6		5		6		-		-		-
3. Property Tax		3		3		3		-		-		-
4. Interest		-		-		-		-		-		-
J. SAVINGS AND INVESTMENTS	-		-		-		10		5		8	
K. OTHER MISCELLANEOUS	4		4		4		13[x]		10[x]		12[x]	
1. Other Goods		-		-		-		-		-		-
2. Other Services		-		-		-		-		-		-
3. Books and Supplies		1		1		1		-		-		-
4. Charity and Gifts		3		3		3		-		-		-
5. Other Miscellaneous		-		-		-		-		-		-
L. TOTAL	100%		100%		100%		100%		100%		100%	

Note: Categories amounting to less than 1/2 percent have been omitted entirely. A dash(-) indicates the category was not surveyed.

	TABLE 2 (contd.) AVERAGE FACULTY/STAFF EXPENDITURE PATTERNS	University of Wisconsin Faculty/Staff Combined		West Virginia University Faculty		West Virginia University Staff		West Virginia University Faculty/Staff Combined		Average of Seven Studies (Fac/Staff Expenditures)	
I.	BACKGROUND										
A.	Bibliog. Ref. Number (Source Doc.)[a]	54		48		48		48			
B.	Year Study Undertaken	1969-70		1970-71		1970-71		1970-71			
C.	Average Annual Expenditures	$7,601		$9,642		$5,452		$6,532		$7,705	
D.	Size of Faculty and/or Staff	11,128		1,114		3,088		4,202			
E.	Study Sample Size	158		-		-		-			
F.	Campus Enrollment at Year of Study	-		-		-		-			
II.	DISTRIBUTION OF EXPENDITURES BY %										
A.	HOUSING	22%		11%		18%		15%		23%	
	1. Rent (or Mortgage Payment)		12		3[y]		12[y]		8[y]		12
	2. Utilities		6		-		-		-		3
	3. Furnishings		2		-		-		-		5
	4. Maintenance		2		8		6		7		3
B.	FOOD AND BEVERAGES	17		24		28		26		24	
	1. At Home		14		-		-		-		19
	2. In Restaurants		3		-		-		-		5
C.	EDUCATION	-		-		-		-		1	
	1. Tuition/Fees		-		-		-		-		0
	2. Other Education		-		-		-		-		1
D.	CLOTHING	5		12		12		12		11	
E.	TRANSPORTATION AND AUTOMOTIVE	10		21		16		18		15	
	1. Public Transportation		-		-		-		-		0
	2. Automobile Oper. and Service		5		-		-		-		8
	3. Purchases (auto, boat, etc.)		5		21		16		18		7
F.	RECREATION AND ENTERTAINMENT	1		9		9		10		5	
G.	PERSONAL SERVICES	3		-		-		-		1	
H.	PROFESSIONAL SERVICES	-		-		-		-		2	
I.	FINANCIAL	13		-		-		-		5	
	1. Payments on Consumer Loans		-		-		-		-		1
	2. Insurance		4		-		-		-		2
	3. Property Tax		4		-		-		-		1
	4. Interest		5		-		-		-		1
J.	SAVINGS AND INVESTMENTS	4		-		-		-		2	
K.	OTHER MISCELLANEOUS	25		23		17		19		11	
	1. Other Goods		8		23		17		19		9
	2. Other Services		2		-		-		-		0
	3. Books and Supplies		-		-		-		-		1
	4. Charity and Gifts		4		-		-		-		1
	5. Other Miscellaneous		11		-		-		-		0
L.	TOTAL	100%		100%		100%		100%		100%	

Note: Categories amounting to less than 1/2 percent have been omitted entirely. A dash(-) indicates the category was not surveyed.

Notes on Tables 1 and 2: Average Student, Faculty and Staff Expenditure Patterns

[a] Source documents referred to by number correspond directly with the bibliographic entry number in this publication. The data taken from these original surveys have, to a limited extent and only where necessary, been recalculated or rearranged to correspond to the expenditure categories listed in Tables 1 and 2.

[b] Excludes tuition paid to University.

[c] The category "personal expenses" includes laundry and dry cleaning.

[d] The category "other miscellaneous" is not broken down in this study, but it probably includes clothing because there is not a separate "clothing" category.

[e] "Auto service" includes automobile insurance.

[f] Calendar year.

[g] For 101 non-county residents living independently off-campus the average total included rent and utilities and amounted to $3,288. The figures are actually for an average of 9.75 months and are a computed average of figures given separately for 582 dormitory residents, the 101 non-county residents, and 1,917 students living off-campus with relatives or spouses or as bachelors.

[h] The budget breakdown is based on study data that include projected summer spending. The campus enrollment and average total budget are for the 9-month academic year only.

[i] The study stated that 20 percent of the student body was sampled. This figure is 20 percent of the academic year enrollment.

[j] Excludes payment to university for food.

[k] Includes technical books.

[l] Includes books and supplies.

[m] Budget given for "full-time equivalent" students, amounting to 80 percent of the total enrollment of 12,100.

[n] Based on a typical student budget supplied by the financial aids office at the University of South Florida.

[o] Not used.

[p] "Personal and business services."

[q] "Fiscal year."

[r] Full-time faculty = 146 (69 in sample)
Full-time staff = 341 (63 in sample)

[s] Monthly mortgage payments were estimated to be 1 percent of the total housing cost or purchase price as indicated in the study. Subsequently, the annual mortgage payments were estimated to be 12 percent of the total expenditure for new houses and are included in this category.

[t] The figures are not based on a survey but rather are calculated from data provided in the *Life Study of Consumer Expenditures*.

[u] "Home operation or improvement" is assumed to include rent and maintenance.

[v] Excludes payment to the university.

[w] Not based on a survey; faculty figures are based on a typical budget for the $12,000 to $15,000 income bracket, and staff figures are based on the $5,000 to $7,000 bracket as taken from data prepared by the Seminole Bank of Tampa, Florida, in September 1969 and included in the study.

[x] "Other expenses" are assumed to include entertainment.

[y] Homeowners were excluded from this survey.

II. General Background Studies

A. BIBLIOGRAPHIES

The following two bibliographies, prepared by the University of California, Office of the President, provide material on the many aspects of the relationships between institutions and communities, in addition to economic relationships.

1. *Campus/Community Relationships: An Annotated Bibliography*. Ira Stephen Fink and Joan Cooke. Berkeley, California: Office of the Assistant Vice President--Physical Planning, University of California, April 1971. 63 pages. New York, N.Y.: Society for College and University Planning, 3 Washington Square Village, Suite 1A, April 1971. 63 pages. Monticello, Illinois: Council of Planning Librarians, Exchange Bibliography 203, July 1971. 66 pages.

This is an annotated bibliography of 97 items, reviewing materials on the subject of campus/community relationships with particular emphasis on studies relating to the nine campuses of the University of California.

Similar in format to this annotated bibliography, it is non-selective, covering published and unpublished materials primarily from 1965 through 1970. Items are arranged by subcategories of community/colleges, community/campus developments, community disturbances, community economic impact, community/urban opportunity, community plans, historical perspectives, housing, and urban renewal.

2. *Campus/Community Relationships: An Annotated Bibliography. Volume 2.* Ira Stephen Fink and Joan Cooke. Berkeley, California: Office of the Assistant Vice President--Physical Planning, University of California, April 1972. 63 pages. New York, N.Y.: Society for College and University Planning, 3 Washington Square Village, Suite 1A, April 1972. 92 pages. Monticello, Illinois: Council of Planning Librarians, Exchange Bibliography 382-383, March 1973. 99 pages.

This is an annotated bibliography of 114 items, reviewing current materials on the subject of campus/community relationships.

The bibliography is nonselective, covering published and unpublished materials primarily of the period 1970-1972. Items are arranged by subcategories of campus growth and expansion, circulation and transportation, commercial services, community disturbances, community involvement, community programs, economic impact, education and continuing education, environs development, environs plans, housing, research parks, special research studies, urban responsibilities, and zoning.

B. THEORETICAL STUDIES

The following five studies provide theoretical and methodological background for evaluating the economic effects and relationships of higher education institutions on local economies and regions.

3. "The Impact of a Higher Education Institution on a Local Economy." Michael K. Mischaikow and Thaddeus H. Spratlen. A Paper Presented to the Western Regional Science Association, Santa Barbara, California, January 28, 29, and 30, 1966. Mimographed. 24 pages. (OUT-OF-PRINT)

The article presents conceptual background to an economic impact study of Western Washington State College (Bellingham, Washington--1965/66 enrollment of 4,300 with 450 faculty and staff). It does not present results of study but concentrates on methodology, emphasizing the development of a model for improving net impact estimates.

A concern is expressed for relationships in an attempt to gain insight into the categories of income and spending impact. The author's recognize the assumptions implicit in putting estimates together, with special attention focused on the matter of precise definition of terms, on sources of information, on means of obtaining data, and on validity or reasonableness of information.

Problems in construction models of economic impact are noted. The paper concludes that because the results are considered to include policy for future planning and because the model proposed was intended as a tool for empirical studies, its consistency be tested against reality.

4. "A Regional Impact Model for Measuring the Flow-of-Funds and Income Effect Generated by Institutions of Higher Learning." Michael K. Mischaikow and Thaddeus H. Spratlen. The Annals of Regional Science, Vol. I, No. 1. (Bellingham, Washington: Western Regional Science Association in cooperation with Western Washington State College, December 1967.) pp. 196-211.

This article describes a model which attempts to evaluate the economic effects of an institution of higher education on its local economy. The model is designed to distinguish three major areas of impact: (1) to determine the interrelationships of revenue and expenditure flows which result in an impact of the "net in-flow of funds" to the region; (2) to distinguish between the "net in-flow of funds" and the "net income impact" attributable to the institutions; and, (3) to provide a method for forecasting the future role of the institution in the local economy.

The main parameters of growth and change in institutions of higher learning are identified in terms of the following variables: student body size, changes in the price level of the economy (consumer price index), trends in student expenditure, changes in the character of the institution (increased graduate programs, new curriculum, etc.), and an index reflecting a non-inflationary upward trend in faculty and staff contributions to the region's economy.

5. Impact of the Space Program on a Local Economy: An Input-Output Analysis. William H. Miernyk, et al. Morgantown, West Virginia: West Virginia University Library, 1967. 167 pages.

This book covers the theoretical and methodological development of an empirical study of the impact of NASA expenditures on the Boulder, Colorado area (home of the University of Colorado) in 1963. It contains a number of suggestions for selecting the geographical scope of a regional study, designing reliability tests of sample survey responses, and estimating alternative concepts of the income and employment multipliers of value when designing metropolitan area impact studies.

A 31-sector Leontief, static, open inter-industry model furnishes the conceptual framework for the study. Surveys revealed a lack of structural interdependence between both the "space" and the "higher education" sectors upon the rest of the Boulder area economy on the output side. While the space sector exhibited heavy interdependence on the input side (i.e., local procurement by NASA contractors), the principal local economic effect of the university was experienced through the consumption of university-related households.

Develops linear consumption functions with household income as the independent variable to allow simulation of the "per capita" and the "population" effects of changes in final demand (i.e., effects resulting from higher levels of income and effects resulting from additional households in the study area).

6. "A Model for Regional Economic Impact of an Institution of Higher Learning." Michael K. Mischaikow and Thaddeus H. Spratlen. Papers and Proceedings of the Third Far East Conference of the Regional Science Conference. Tokyo, Japan: University of Tokyo, 1969. pp. 121-139.

This article presents two methods for measuring regional economic impact of higher education: the direct fund flows associated with an institution of higher learning, and secondary and indirect effects of the exchange relationships in the form of income generation.

The study covers: (1) the basic format and interrelationships of revenue and expenditure flows which generally culminate in the "net in-flow of funds" to the region over a period of time as a result of the operations of an institution of higher learning; (2) distinction between the "net in-flow of funds" concept and that of the "net economic impact" attributable ultimately to the institution; and, (3) the dynamic variables needed to provide a method for forecasting the future role of the institution and the local economy.

A nine-sector transactions matrix is used to show the flow of funds among the principal elements under study. Basic expenditure-revenue relationships are presented in the form of linear equations.

The model is extended to include the measurement of the indirect effects of exchange relationships involving a college or university in the form of income impact. Concepts of "value added" and "regional multiplier" are used. Also, the article directs attention toward defining and analyzing the main parameters of growth and change with regard to various aspects of the operations of an institution. Behavioral equations are presented as a means of projecting the future magnitude of flow of funds impact and income generation.

7. Regional Economic Effects of Higher Education Institutions. Barclay M. Hudson. Working Paper 18. Los Angeles, California: School of Architecture and Urban Planning, University of California, Los Angeles, May 1973. 51 pages.

This report focuses on the effects of institutions of higher learning (IHL) from the standpoint of regional effects, as opposed to effects that would accrue to either individual students or the nation as a whole. Emphasis is on economic benefits, or the monetary revenue that IHL's might bring to a region, as distinct from cultural advantages or particular types of manpower development.

A conceptual model is presented describing five separate economic mechanisms which transmit the effects of an IHL to its local region. The nature and relative strengths of these five linkages are considered, and a section dealing with the policy implications of the analysis forms the concluding part of the report.

The linkages are as follows: (1) human capital development (based on alumni data from the University of California, Los Angeles); (2) knowledge that contributes to the productivity of the local economy (distinguishing between technical knowledge relating to a specific economic sector and knowledge relating to a particular region itself); (3) purchases of goods and services from local suppliers (how higher education functions in the role of an export-based industry); (4) multiplier effect of incomes (refers to the respending of exogenously generated incomes within a bounded economic system); and, (5) attractive amenity effects (the ability of an IHL to draw human and capital resources into the locality, based on the results of a survey of State and Metropolitan Chambers of Commerce throughout the United States).

Whereas higher education has generally taken a passive role in responding to market demands for its products (graduates and knowledge), it is suggested that a more active regional role would require an institution to intervene more directly in generating those demands.

Based on the author's own survey, the report presents findings that less than three percent of the University of Calfornia, Los Angeles alumni are in the immediate locality, about one-fifth are in an easily commutable region of West Los Angeles, two-thirds are in the larger metropolitan area of Los Angeles County, 80 percent are in the state of California, and the other 20 percent elsewhere. The lessons to be learned from the UCLA alumni data are claimed to be: first, that the effect of an institution probably cannot be generalized unless explicit allowance is made for the size and economic diversity of the region it is intended to serve and the size and diversity of the institution itself; second, if the university specifically takes on a regional role, it cannot remain indifferent to the problems and opportunities of resources flowing in and out across the region's boundaries, clearly implying the need for a broadening of competitive instincts underlying higher education policies.

Regarding the question of university expenditures, the report finds that if higher education is financed from non-local sources, and the students come from outside the locality, there is a clear net gain for the region. On the other hand, if spending comes out of local pockets, it is necessary to consider whether that money would have been spent locally just as well in the absence of an institution. The author states there are two major qualifications that each region must take into account in calculating the economic value of investing in higher education: first, future benefits have to be discounted, and second, the assumption that present incomes foregone in the locality will be locally repaid by future higher incomes depends on the willingness of the graduates to stay in the region.

Regarding amenity value, the report finds that first, the effects are difficult to measure; second, to the extent there is indirect evidence about the magnitude of the effects, their strength seems to vary considerably with the nature of the region; and third, it seems likely that the effects would be enhanced by higher education policy that departs somewhat from tradition. Claims that higher education "not only produces amenities, it also enhances the demand for cultural amenities and for better education for the next generation."

The author concludes: first, The regional role of higher education involves a quite different set of economic mechanisms than the ones involved in the economics of education from an individual or national standpoint; second, it is difficult to establish empirically that IHL has a major economic impact on its surrounding region although a priori arguments for it abound; third, it is not the traditional role of higher education to meddle directly in economic processes, but there are a few exceptions which may be most useful prototypes for defining a specifically regional role for an IHL.

He states that land grant colleges made a difference in the American rural landscape. "The fact that our findings show such a weak effect of the present-day IHLs on regional development probably suggest, above all, that American higher education has failed to break the old molds and adapt as well to the needs of the twentieth century as it succeeded in doing in the last."

C. PROCEDURAL STUDIES

The following two studies, one published and one unpublished, illustrate the steps required for measuring the economic relationship impact of an institution.

8. Input and Output: A Handbook of Methods and Procedures for Developing a Definition of Indiana State University's Total Contribution to the Local Terre Haute Area with some Preliminary Data. (Preliminary Report). Harry F. Krueckeberg and Ronald Vaughn. Unpublished. Terre Haute, Indiana: The Bureau of Business Research, Indiana State University, November 1970. 61 pages plus appendix. (OUT-OF-PRINT)

Initiated in February 1970, the general object of this preliminary study was to develop an economic input-output model and description of Indiana State University. Specifically, the objectives were to determine the economic input or sources of income of the university, the university's total economic output to the community, and the tangible benefits of the university to Terre Haute, and to provide a base for further research and analysis.

The report suggests that the concept of community interdependence and economic linkage involves the discussion of the university in the role of an export firm. As income rises in the export sector, retail and service establishments expand their sales; conversely, a decline in export-derived income depresses the level of business serving the region.

The study discusses both the income multiplier concept and the employment multiplier concept. Income multiplier means funds spent by university students, faculty, and staff, which are in turn used by those receiving the funds to buy goods and services, thus continuing the recirculation of money. The employment multiplier concept means that as export industries continue to grow, localized businesses and services also expand.

The authors concentrate on illustrating the steps required to develop information relative to the institution's impact on Terre Haute and suggest ten subject areas for analysis: total dollar inflow of university income, total dollar outflow of the university expenditures, total inflow of construction funds, total outflow of construction funds, tangible benefits from construction, tangible benefits to Terre Hause due to the university, student expenditures, faculty and staff expenditure, visitor expenditures, and tangible tax benefits. For each of these ten areas, general procedures for estimating the economic impact, including sources of information and flow charts are provided.

Preliminary findings indicate that of the total dollar value of purchase orders issued by the university, 48 percent were spent within a 25 mile radius, 6 percent within 25 to 75 miles, 35 percent outside of 75 miles but within Indiana, and 11 percent outside of the State.

When reviewing the employment impact of the university, the institution was included as a basic industry, since its employment growth is independent of the growth of the region. The report estimates the institutional employment multiplier to be approximately 1.56. The 1.56 institutional multiplier is compared to a 1.30 export industry community employment multiplier for all standard industrial classifications.

A comprehensive list of intangible benefits afforded the local community by the university is provided. An extensive bibliography of economic impact studies is also included. Appendices to the report include questionnaires, data and procedures leading to the development of the employment multiplier, and a list of definitions of the various inputs to the study and the sources for the information and data related to these definitions.

9. Estimating the Impact of a College or University on the Local Economy. John Caffrey and Herbert H. Isaacs. Washington, D. C.: American Council on Education, 1971. 73 pages.

The authors indicate the purpose of publication is to provide a better basis for understanding the economic relationships between a campus and its surrounding community. It is intended to be a "how to do it" manual for finding out whether it costs a community more or less than it gains economically to have a college or university in its neighborhood environs.

The report states that the study differs in several respects from other economic impact studies brought to the attention of the authors; (1) it takes account of a wider variety of factors and effects; (2) it includes estimates of negative factors; (3) it makes estimates and assumptions in such explicit terms that, though one may question them, there is no doubt about the method employed; and; (4) it argues that studies based on the models presented may be more justifiably compared, at least to the extent that the same kinds of facts and methods are used.

Included in the report are recommendations for the definition of the environment to be studied, descriptions of the economic impacts that are generally important, straightforward equations for calculating their values, basic sources for obtaining the required data, and suggestions for assembling and presenting the results.

Economic impact as presented is measured through a series of linear cash-flow models and submodels covering "business", "government" and "individuals".

The "business" models and component submodels account for (1) the direct purchases from.local businesses made by the college and faculty, staff, students, and visitors; (2) the purchases from local sources by local businesses in support of their college-related business volume, or "second round" purchases; and (3) the amount of local business volume stimulated by the expenditure of college-related income by local individuals other than faculty, staff, or students.

The "government" models consider five separate aspects of the interaction between the college and local governments. These include submodels of (1) taxes and other revenues, including State funds, received as a result of the presence of the college and college-related indviduals and activities; (2) government expenditures and operating costs of government-provided municipal and public school services allocable to college related-influences; (3) the value of local government properties allocable to the college-related portion of services provided; (4) an estimate of the amount of real estate taxes foregone through the tax-exempt status of the college; and (5) the value of self-provided services, such as a college police force.

The "individual" models deal with the following three subject areas: (1) the number of local jobs attributable to the presence of the college; (2) the personal income of local individuals derived from college-related jobs and business activities; and (3) durable goods procured with income from college-related jobs and business activities. These three submodels result in values that are not additive; that is, the number of jobs cannot be added to personal income, nor can either of these be added to durable goods.

To assure an approximation of reality, the models were tested using data from the Claremont Colleges in Southern California. Results are presented.

The report concludes there were two real limitations on the value of the models: (1) the problem of long-range effect, or predictive capabilities, and

(2) economic impacts of a college on its environment are varied and complex, and the type of formalized approach presented is merely a starting point. It was stated that the best time to originate a study of economic impacts is when it is not needed, i.e., when there is sufficient leisure or relief from immediate pressures to do it well.

The appendices include, among other items, sample questionnaires, methods for determining expenditures, and descriptions of tax and tax-related arrangements between colleges and universities and local governments.

The report contains a comprehensive bibliography of economic impact studies previously undertaken by individual colleges and universities.

D. GENERAL STUDIES

The following four studies are neither theoretical nor procedural. They are general studies describing expenditures, employment, and services, and describe the basic economic contributions of an institution.

10. How Institutions of Higher Education Contribute to the General Economic, Social and Cultural Betterment of Greater Philadelphia. Philadelphia, Pennsylvania: Greater Philadelphia Movement, January 1966. 55 pages. (OUT-OF-PRINT)

This report attempts to identify specific services and contributions to the general economic, social, and cultural improvement of greater Philadelphia provided by the forty-seven degree granting institutions located in southeastern Pennsylvania. It claims that these institutions perform the following desirable functions: (1) training people for higher paying jobs, (2) stimulating local industrial growth, (3) expending funds for new facilities, (4) stimulating the economy through staff and student expenditures, and (5) providing cultural services.

To support this point, the report gives data on current student enrollment and expenditures, employment, and payroll, information on redevelopment and research programs, and lists of services to the community developed by these institutions. A theory on the economic productivity of higher education, a bibliography, and an appendix listing the full and part-time enrollment of degree granting institutions located in Philadelphia in 1964 are also contained in the report.

11. Market Analysis for the Single-Industry Community: An Illustrative Study of a University Town. Stephen D. Messner. Real Estate Report No. 6. Storrs, Connecticut: Center for Real Estate and Urban Economic Studies, The University of Connecticut, April 1969. 52 pages.

This study claims that the potential economic impact of the university on the local area is directly related to student enrollment increases and has four immediate effects: (1) the university increases purchases of goods and services (both within and outside the local area); (2) new faculty must be hired to teach the increased student enrollment; (3) additional support staff must be hired to support the increased faculty; and, (4) the additional students, faculty, and staff will make direct purchases from the private and public markets and the university.

The author suggests that the student market segment may be analyzed according to place of residence, type of affiliation with the university, household characteristics, and sex.

Conclusions in terms of market-analysis are twofold: (1) a single-industry town, such as an isolated university town, will have a payroll structure that is atypical and skewed as compared to a larger, economically integrated area; and, (2) the single-industry community will exhibit growth patterns different from a larger region or nation.

12. "The Economic Impact of a New University Upon Its Community." Warren J. Winstead (President, Nova University). Investment Dealers' Digest. November 27, 1967. pp. 50-53.

The author claims business interest in university development arises from two sources: first, the burgeoning student population which forced states to finance major new campuses by bond issues and tax increases; and second, the tremendous attraction of a new light industry base, which is highly flexible in its ability to locate, but with a tendency to locate near centers of productive educational and research activity. Cites examples of the latter as the light electronics industry along Route 128 circling Boston/Cambridge, and the movement of the aircraft industry to California following the establishment of the Jet Propulsion Laboratory at the California Institute of Technology.

The article discusses primarily the private, graduate school that emphasizes sciences and technology and highlights Nova University--a graduate institution at Fort Lauderdale, Florida, which opened in September 1967 (and offers only the Ph.D. Degree).

Based upon a study of the impact of the university upon Broward County, the author indicates that in 15 years the campus will have 25 buildings, an enrollment of 1,500 students, and a faculty and staff of 700. By 1980, claims Nova University will add the following above normally expected increases: Total new basic and service workers, 60,101; total annual salaries and wages, $631 million; total new households, 51,085; and, total added population 176,309. (Editor's personal note: These figures seem extremely exaggerated.)

13. "The Economic Impact of the University Upon the Community." An Address Given by Dr. Jack E. Freeman (President of the University of Pittsburgh at Johnstown) to the University of Pittsburgh School of Business Alumni, February 1, 1971. 9 pages. Mimeographed. (OUT-OF-PRINT)

The author claims "there is a popular notion that somehow the University is a liability which the community reluctantly tolerates because, like peace and motherhood, education is a public good." He illustrates why these perceptions and attitudes are inaccurate and misleading, and shows that colleges and universities are among the principal assets of the community.

The relationship between economic progress and educational achievement is described by stating that states in this country "with the highest percentage of college graduates in their population also tend to have the highest level of per capita income and per capita retail sales and concurrently, those with lowest educational achievement tended to rank lowest in the economic indicators."

The University of Pittsburgh is noted as becoming a major instrument of social mobility for thousands of Commonwealth of Pennsylvania citizens. The author observes that "since it became a State-related university in 1965, the number of entering students whose fathers had no college education whatsoever has risen from approximately 55 percent to more than 63 percent, and the percentage of students with annual family incomes below $10,000 has risen from 40 percent to 53 percent."

The following facts regarding the contributions of the University of Pittsburgh to the Pittsburgh region are presented: (1) personnel on the university payroll have a disposable income--after taxes, insurances, savings--of more than $100,000 per day; (2) the university spends more than $16 million a year for consumable supplies of which approximately one-half goes to 1,200 local Pittsburgh suppliers; (3) in 1969, employees of the university paid wage taxes to the City of Pittsburgh and to the surrounding communities, and occupational taxes to the City of Pittsburgh, of more than $1,000,000; and (4) in 1969, the university itself paid city, school, and county property taxes of almost $200,000.

Another significant impact of the university on the community is noted as the contribution of trained people to staff industrial, professional and public service agencies. Fifty-two percent of the physicians and 95 percent of the dentists of the greater Pittsburgh area were graduates of the University Medical School, each day more than 1,600 community residents are patients in the hospitals in the University Health Center, and 8,000 patients are treated annually in the University's Dental Clinic. More than one-third of all teachers in Allegheny County received at least one degree from the university and 50 percent of the attorneys who practice in Allegheny County are Pitt alumni.

The address concludes that "while Pitt serves its students and the commonwealth by fulfilling its principal mission of teaching, research and public service, it also serves the economy for this community in a variety of direct and tangible ways, and constitutes a principal force in the economic and industrial growth of Western Pennsylvania."

III. Special Purpose Studies

A. STUDENT EXPENDITURE STUDIES

The following eight studies are analyses of expenditure patterns of students. Whereas many of the other studies in this bibliography present data on both student expenditures and institutional expenditures, the following are single purpose studies on student expenditures.

14. "Arizona's Student Market". George F. Leaming, Pedro Escudero and Dennis M. O'Neill. Arizona Review. Volume 17, No. 2 (February 1968). pp. 7-10.

Based upon a survey at the University of Arizona during the 1967-68 academic year, the article estimates that students at Arizona's three universities spent more than $154 million within the State during the year; more than 38 percent ($59 million) of the spending was by students who were not permanent residents of Arizona.

Of the student expenditures, 22 percent was for food and beverages; 19 percent for educational expenses including tuitions and fees, books and supplies; 18 percent for housing; 10 percent for transportation expenses, including automobile purchase and operations as well as public transportation fares; 8 percent for recreation; 8 percent for clothing; and the remaining 15 percent for a variety of less significant items.

By class standing, estimated per capita annual expenditures for University of Arizona students ranged from $2,804 by freshmen, to $3,828 by juniors, to $4,642 by graduate students.

15. A Study of Selected Off-Campus Purchases in Macomb by Western Illinois University Students. Students of the Principles of Marketing Classes of the College of Business Under the Direction of Dr. LeRoy Donaldson and Mr. Paul Holmes. Macomb, Illinois: Center for Business and Economic Research, Western Illinois University, 1971. 24 pages.

This study determines the economic impact of Western Illinois University students on the City of Macomb through their off-campus expenditures during the winter quarter 1970-71. From an original sample of 600 students, useable results were obtained from 528 respondents. This represented a 4.6 percent sample of the 11,582 students.

The mean expenditure of the respondents, for the winter quarter, was $325. Collectively the student body spent $3.8 million dollars. Over the course of the entire academic year a total of $11.3 million, excluding the summer session, would have been spent. Assuming that retail sales for the City of Macomb for 9 months totaled $40.0 million, then the student expenditures accounted for 28 percent of the retail sales in Macomb.

The average quarterly amount earned by the students was $33 for a total earnings of $382,000.

The study excludes the economic effects of the 97 administrators, 778 faculty, and 620 civil service employees of the university. Together they accounted for 19% of Macomb's non-student population.

Of the average winter quarter expenditures, $50 per student was spent on housing, $39 for food and groceries, $34 for entertainment, $33 for books and school supplies, $27 for clothing and shoes, $24 for automobile gas, oil and repairs, $15 for meals bought off-campus, and $103 for all other expenses.

Average quarterly amount spent off-campus in Macomb for students living in sororities or fraternities totaled $639, for students in private housing the total was $618, and for students in university housing it was $228. Separate charts in the report compare current expenditures with results from a 1964 study.

16. "How Much Money Do Students Spend in a College Town?" James M. Kelley and Robin T. Peterson. College Management. Volume 6, Number 12 (December 1971). pp. 26-27.

This article presents results of a survey made in 1971 to determine amount of funds spent by Idaho State University students in Pocatello, Idaho, during the academic year 1969-70. The study also ascertained the allocation to specific categories of goods and services, and generated information regarding selected student consumer activities. Results are based upon 468 completed questionnaires. The average age of respondents was 20, 64.4 percent were single, and during the school year 51.6 percent were employed.

Per student, the average monthly spending was $306 for items tallied on a monthly basis, such as housing, utilities, food, and clothing, and $491 for items on an annual basis, such as tuition and fees, books and school supplies. When the monthly expenditures are multiplied by a nine-month school year, and added to annual expenditures, the average student spent $3,244 during the academic year, excluding the summer session. When this amount was extended to include all 5,762 full-time day students attending the university, a total aggregate spending of $18.7 million resulted.

Average income earned in an academic year by the respondent or the spouse was $2,550. This average income was $694 less than the average expenditure level indicating that parental or other support, or summer income made up the difference. The percent of income earned by spouse (if married) was 42.4 percent--indicating a large portion of the students relied on both the earnings of the husband and wife. Total summer income by students or spouse who worked was $2,028; average amount per school year provided by parents to both single and married students was $1,530; average amount borrowed to finance their education during the academic year was $268.

17. The West Virginia Student Market: A Comparative Analysis of Student Expenditures and Student Opinions of the Morgantown Business Community, 1963 and 1971. James Davission Courtney. Unpublished Master of Science in Journalism Thesis. Morgantown, West Virginia: West Virginia University, The Graduate School, 1971. pp. 292.

The purpose of this study was twofold: (1) to meet the need for current market research concerning the West Virginia University student body and (2) to compare the economic contribution to the Morgantown business community in two time periods--1963 and 1971. The report includes chapters reviewing the literature on student expenditures dating back to 1916, development of the student survey questionnaire, methodology of both a previous 1963 study and the current 1971 study, presentation of student opinion findings, and expenditure findings.

Results are based upon a survey conducted during the second semester of the registration of the academic year 1970-71. A 32-item questionnaire was returned by 92 percent of the 14,556 enrolled students.

Of importance in this study is the section on definition of terms used in the study and summaries of each of the major expenditures by aggregate student group and also by class standing, marital status, residency, and amount spent in the Morgantown community. Expenditure categories include food (29 percent), clothing (7 percent), rent (42 percent), recreation (10 percent), automobiles (7 percent), stereo equipment (3 percent), haircuts (1 percent), and tobacco (2 percent).

According to the author, the average expenditure per month of freshmen students was $132; sophomore students, $145; junior students, $146; senior students, $163; and graduate students, $260. In total, students spent an estimated $2.5 million monthly, excluding university fees. A comparison of the 1963 and 1971 findings indicated that student expenditures had increased approximately two and one half times. Average income per month for freshman students was $107; for sophomores, $114; for juniors, $122; for seniors, $134; and for graduates, $175.

In the student opinion portion of the study, the Morgantown business community was divided into five elements: restaurants, recreational facilities, merchants and sales clerks, clothing stores, and merchandise prices. The findings suggest that student opinion of restaurants was unfavorable, as was their opinion of local off-campus recreational facilities. Their opinion about merchants and sales clerks was generally favorable as was the opinion about clothing stores. The author concludes that the student opinion of local prices was also unfavorable. In general, the responses indicated that student opinion of the business community became less favorable as class rank increased.

A copy of the survey questionnaire is included.

18. An Eastern Montana College Study of Student Expenditures, 1972. Billings, Montana: Office of Information, Eastern Montana College, 1972. 8 pages.

This report estimates students' expenditures for the nine month academic year 1971-72. Student expenditure patterns were based on a survey of 126 of the 3,202 students enrolled.

Annual expenditures averaged $646, including $511 for registration and student fees, and $135 for school supplies and books. Monthly expenditures averaged $315, including $69 for rent or house payments, $17 for utilities and fuel, $35 for furniture, $52 for food and beverages at home, $18 for food and beverages at restaurants, and $16 for food and beverages on campus. Other monthly expenditures include $31 for automobile and transportation, $18 for clothing, and $8 to $10 per month each for medical care, personal care, gifts, and movies. All other consumption items totaled $22.

When the monthly expenditures of $315 were expanded to the average academic year of the nine months (for a total of $2,833) and were added to the $646 of annual expenditures, a total average annual expenditure of $3,479 resulted. The total contribution of all students to the economy was more than $11.1 million per year.

The average amount in a student's checking account was $188, and in a savings account $558. Fifty-seven percent of the students who responded to the survey were employed during the academic year, averaging 24.4 hours of work per week. The average income earned during the academic year by a student and/or spouse if they were married was $3,520. Forty-five percent of the students received financial help from parents with an average academic year amount of $823.

Twenty-five percent of the students borrowed money to finance their education with an average loan amount of $845 per year.

19. An Inquiry into the Expenditures and Selected Buying Habits of Idaho State University Students, 1972. William E. Millner, Robin P. Peterson, and James M. Kelly. Pocatello, Idaho: College of Business, Idaho State University, 1972, 7 pages.

This study determines the amount of funds spent by Idaho State University students during the 1971-72 academic year. Student expenditures were based upon a sample of 302 of the 5,624 students enrolled.

On the average, students made annual expenditures of $517 for items including tuition fees, $383; books, $78; school supplies, $42; and real estate taxes $14. In addition, they made monthly expenditures averaging $338, of which the most significant items were housing, $64; housing services, $16; household utilities and furniture, $44; food and beverages at home, $40; food and beverages in restaurants, $17; automobile operation, $25; and clothing $27. Other items ranging from $7 to $13 per month included automobile repair, transportation tickets, medical care, gifts, movies, and other entertainment.

When the monthly level of spending is translated into a nine month school year (yielding a total figure of $3,040) and is added to the annual expenditure total of $517, it produces a total student expenditure of $3,557 annually.

Of the students surveyed, 45 percent were employed during the school year; average total income earned during the year by the student or his/her spouse was $2,143. On average, if the student was married, 36 percent of earnings was by the spouse. The average amount in the checking account was $129 while the average amount in a savings account was $410. The average annual amount borrowed to finance their education (for both single and married students) totaled $473.

The authors conclude that students do contribute substantially to the local economy, spending an average amount exceeding $21 million.

20. Isla Vista Income and Expenditure Study. Carter Ray. Isla Vista, California: Joint Planning Committee for Isla Vista, University of California, Santa Barbara, Santa Barbara County, January 15, 1973. 22 pages. (OUT-OF-PRINT)

The purpose of the study was to: (1) assess spending patterns of Isla Vista residents for goods and services both within and outside of Isla Vista, and (2) provide quantitative insight into the question of how to establish a more stable economic base.

The method used was a six item questionnaire on a socio-economic profile and seven items on spending pattern breakdown. Questionnaire was distributed to 250 addresses chosen as a random sample.

Results included: (1) Overall, 30 percent of all resident spending was in Isla Vista; (2) Approximately $3.3 million is spent in Isla Vista during a nine-month school year and $8.1 million is spent outside Isla Vista.

The final section of the report is a comparative analysis of gross sales volume per square foot of store space in Isla Vista and comparable neighborhood shopping area elsewhere in the country. Isla Vista stores come close to the national average of gross sales volume per square foot in everything but clothing and services where sales volumes are quite low. This difference is explained in terms of lifestyle.

21. "Estimated Contribution of College Enrollments to the Economy of the Community of Bemidji, Minnesota (1972-73)." Bemidji, Minnesota: Office of Research and Development, Bemidi State College. February 15, 1973. 2 pages.

In 1972-73, Bemidji State College had a student enrollment of 4,279, of whom 1,903 lived in dormitories. The total expenditures of the students amounted to $10.2 million.

Annual (9 month) student expenditures were as follows: Married student, $5,030; single student living away from home, $1,999; student living at home, $2,103; graduate student, $2,732. Average expenditure per student, $2,392.

Of the above, the following expenditures were in the local community: 56 percent of the $4.7 million for meals and housing, 10 percent of the $0.7 million for books and supplies, 80 percent of the $2.0 million for personal expenses, and 40 percent of the $0.7 million in transportation costs.

The authors calculate that 60 percent of the $5.2 million of university salaries was also spent in the community.

Concludes that the dollar effect of every 100 students, either added to or subtracted from the enrollment, amounted to $206,000.

B. FOREIGN AND OUT-OF-STATE STUDENT STUDIES

The following three studies explore the question of economic benefit of out-of-state students and foreign students in both public and private institutions.

22. The Impact of Private Colleges and Universities on the Economy of the State of Missouri. Bruce W. Macy and Robert Gustafson. Prepared for the Missouri Commission on Higher Education, Jefferson City, Missouri. MRI Project Number 3194-D. Kansas City, Missouri: Midwest Research Institute, September 16, 1968. (OUT-OF-PRINT)

The report explores the role of the private colleges and universities on the economy of Missouri. The focus is on the more obvious impacts--student spending, college employment, and college expenditures.

Data was based on a survey of students attending 35 private universities, four-year colleges, and junior colleges throughout the state. The current income for the 1966-67 year for these colleges was $141.3 million, of which $84.6 million (roughly 60 percent) came from sources outside the state. Total enrollment of the 35 colleges in 1966 was 36,280 full-time equivalents (FTE) or a total actual enrollment of 41,040 based on a FTE factor of 88 percent. In 1966, out-of-state students represented 47.7 percent of the total number of FTE students.

Exclusive of purchases of major items, the average out-of-state student spent $3,400 annually, of which $2,300 was for tuition, food and lodging paid to the institution. This meant that the 17,305 out-of-state students attending private colleges spent approximately $59 million.

Regarding significant purchases, over 30 percent of the students purchased (or reported plans to purchase) an automobile at an average expenditure of almost $1,700. More than 25 percent reported purchases of tape recorders, radios, record players, and the like. Total purchases by out-of-state students for these supplementary major purchases were estimated to be $10.6 million.

Although an independent multiplier was not calculated, the study used the expenditure multiplier of 2.9 derived by Richard Vizard in his study of a small college in Bangor, Maine (see Items 30 and 41 in this bibliography). Applying this multiplier to the estimated direct expenditures by out-of-state students yielded an indirect impact of $131 million. This, coupled with the direct spending of $59 million, indicated that about $200 million was added to the Missouri economy in 1966 as a result of expenditures of out-of-state students attending private colleges in the state.

During 1967-68 school year, the schools provided employment for over 16,225 persons including 3,350 faculty members, 7,000 full-time support personnel, and 5,800 part-time workers. The part-time workers were the equivalent of about 2,000 full-time employees. Salaries for faculty and staff totaled $61.7 million. By comparison, total employment at private colleges and universities was greater than the total number of workers employed in any of the following manufacturing industries in Missouri: lumber and wood products; furniture and fixtures; stone, clay or glass products; primary metals industries; instruments and related products; textile mill products; and paper and allied products.

During the five years 1961-62 through 1965-66, private schools in Missouri were estimated to have invested approximately $104.4 million in land, construction and equipment. This sum was nearly equal to the $107.0 million invested by public supported colleges and universities during the same period.

23. "Foreign Students in Indiana: Our Intangible Exports." Richard N. Farmer and William E. Renforth. Published in the Out Look Edition, Indiana Business Review. Volume XLVI, May-June 1971. pp. 12-16.

This article estimates that in 1968-69, there were 3,500 foreign students studying in the Indiana colleges and buying services with foreign currencies. The authors' claim that these student purchases, although made in the state, could be considered an export since conceptually there were few differences between the export of products valued at $1 million and the payments by foreign students of $1 million for educational services.

The total expenditures of these students amounted to $17.6 million per year, of which 12 percent, or $2 million was provided by the federal government through A.I.D. scholarships and other means of support. The foreign students' "export" sales figure made this industry the fourteenth largest exporter in Indiana. As a result, sales of services and related items to foreign students were greater than the export of known Indiana export items such as rubber and plastic products, lumber, soybean oil, and paper.

The article suggests that if each $10,000 of sales generates one job, then about 1,700 jobs were created because of foreign student spending.

In estimating future gain, approximately 10 percent of the foreign students attending Indiana universities stay in the state after graduation and seek employment. "Because most of them have graduate level qualifications in fields such as teaching, medicine, engineering, management, and science, they tend to enter well-paying and highly productive fields." The authors conclude that it is impossible to put a cash value on this brain gain, but claim that Indiana attracts workers who are skilled and intelligent and thus the value of the state's human resources is increased.

24. "State Costs and Benefits from Out-of-State Students." A. Gerlof Homan, Neil J. Dikeman, Jr., and John M. Campbell. Oklahoma Business Bulletin. Bureau for Business and Economic Research, University of Oklahoma. Volume 39, No. 6 (June 1971). pp. 5-12.

The article reviews the economic impact of out-of-state students to determine if the State of Oklahoma actually pays a premium to attract the students. The following four steps were used to calculate costs and benefits: the number of out-of-state students and their expenditures of out-of-state funds within the state were determined; the multiplier effect of these expenditures was estimated; the tax received by the state from expenditures originating from out-of-state sources was calculated; and the costs of education were compared with monetary benefits to the state. Costs per credit hour were based on 1969-70 data, and enrollments were from the 1970-71 academic year.

The authors find that out of a total University of Oklahoma enrollment of 16,869 on the Norman Campus, 4,028 were out-of-state students who paid university costs of $34.25 per credit hour, compared with $12.35 for in-state resident students. Because estimated cost of educating a student was $42.49 per credit hour, this left an apparent deficit of $8.24 per credit hour for each of out-of-state student.

Research indicated that the students annually spent an average of $3,355 of out-of-state money, amounting to $13.6 million which circulated within the Oklahoma economy. Based on an income multiplier for the State of Oklahoma of 1.74, the expenditures of out-of-state funds created approximately $23.6 million in additiional income to Oklahoma residents, which in turn provided jobs to some 4,000 persons.

Based upon tax rates applied to the taxable expenditures of students, approximately $97,000 in tax revenue was returned to the state. In addition, using the following distribution of consumer expenditures--retail goods, 45 percent; goods subject to excise tax, 17 percent; and non-tax items, 38 percent--the $23.6 million in multiplier income returned an additional $455,000 in state sales and excise taxes. Also, state income tax on the multiplier income resulted in an additional $489,000 being paid to the state.

As a result, the total new state revenues totaled $1,041,000; by comparison, the total cost of educating out-of-state less out-of-state tuition resulted in a deficit amount of $1,046,000. Thus, the authors conclude that the actual net deficit created by the presence of out-of-state students was the difference between the two numbers, or approximately $5,000. This was equivalent to an annual deficit per $0.04 per credit hour for out-of-state students; on an annual basis of 31.5 credit hours, it amounted to $1.26 per student.

C. TAX AND TAX EXEMPTION STUDIES

The following four studies review the economic base of cities and address concern for tax and tax related questions including property tax exemption. In all four cases these questions are the central theme of the studies indicated. Other studies in this bibliography also review the question of tax exemption, but in relationship to other economic impacts of the institutions including student and institutional expenditures.

25. Future Growth Patterns and Municipal Revenue in Berkeley. Prepared by the Stanford Research Institute for the City of Berkeley, California. Berkeley: March 1957. 81 pages (OUT-OF-PRINT)

This study presents an analysis of the City of Berkeley's economic base and growth trends and an examination of the tax base and trends of assessed valuation and tax income. It deals in turn with the economic characteristics of Berkeley, the growth of population and housing, the outlook for retail sales, the extent of tax-exempt land, and the projection of tax revenues ten years into the future.

The authors suggest that, in terms of its land use pattern, the City of Berkeley represents no extremes with respect to any of the major land use categories. They indicate that public and semi-public land uses, including the University of California, are not particularly large in Berkeley in relation to other cities. Particular attention is paid to revenue generated by increments of population occasioned by the continued growth of the University of California and other educational institutions. The report concludes that it is evident that population stemming from these institutions generates city revenue through several major sources: for example, by increasing the base on which state gasoline and automobile taxes are allocated, by purchase of goods subject to sales tax, and by contributing to the support of a variety of tax-paying enterprises.

It is argued that tax-exempt land uses should not be judged solely on their effects on loss of property taxes because they encourage complimentary uses on adjacent land which may raise the assessed value of those parcels.

The report concludes that property tax would continue to be the largest single source of City of Berkeley revenue if then-current tax rate and assessment practices were continued.

26. Tax and Tax Related Arrangements Between Colleges and Universities and Local Governments. John Caffrey. A.C.E. Special Report. Washington, D.C.: American Council on Education, August 12, 1969. 7 pages plus appendix. (OUT-OF-PRINT)

This report presents results of a May 1969 questionnaire distributed to 407 institutions of higher education estimating the extent to which they have responded to the demands of local governments that tax-exempt organizations meet a portion of the cost of local government services.

Generally, findings indicated that smaller institutions were more likely to pay taxes than larger institutions. Although 33 percent of the institutions in the sample reported enrollments of fewer than 1,000 students, 54 percent of these institutions reported paying taxes. By contrast, 28 percent of the sample reported enrollments of 5,000 or more students, but only eight percent of these institutions reported paying taxes.

Of the institutions surveyed, 68 percent were in communities of less than 100,000 persons, while 79 percent of the institutions which paid taxes were located in communities this size. Moreover, 88 percent of the institutions which make equivalent, quasi-tax payments were in communities of less than 100,000. This data indicated that the pressure to pay taxes or to make some equivalent arrangements is stronger in smaller communities than larger communities.

Of the institutions making some payments, 29 percent initiated the practice voluntarily, while 38 percent initiated the practice jointly (i.e., by agreement with local government units), and 33 percent made payments or provided services as a result of requirements, rulings, or ordinances which they did not initiate.

In summary, the findings indicate that the small, private, four-year colleges were much more likely to be taxed and would have entered such taxing arrangements reluctantly.

Median annual average tax and quasi-tax payment amounted to $13,000, while those institutions which provided direct services had a median cost of approximately $50,000. In rank order of frequency, taxes or quasi-taxes paid, or services provided, were for the following purposes: sanitary services (50 percent), general fund (40 percent), fire services (37 percent), police services (18 percent), street maintenance (14 percent), school fund (11 percent), utilities (7 percent), hospital fund (4 percent), and flood control (3 percent)--because of multiple responses, percentages total more than 100 percent.

The author claims that to his knowledge the present study was the first national study of its kind and thus its findings should be regarded as preliminary.

27. "Exemptions for Medical and Educational Institutions" (Chapter E) and "Exempt Property in Local Tax Rates" (Chapter J). Excerpts from Institutional Property Tax Exemptions in Massachusetts. Boston, Massachusetts: Massachusetts Taxpayers Foundation, 145 Tremont Street, September 1971. pp. E-1 to E-10 and pp. J-1 to J-8 plus appendices. (OUT-OF-PRINT)

This report stresses "the justification usually given for the exemption of most types of institutional properties is that the institutions are performing functions which are public in nature and which government would otherwise have to perform. The tax exemption is the quid pro quo for the performance of a public function."

The value of the tax exemption given to educational institutions and hospitals is considered in relation to their operating expenses and also in relation to the probable cost of providing equivalent services in tax subsidized institutions. The authors explain that dependable information of the value of tax exempt properties is lacking. Accordingly, it is possible only to approximate the value to higher educational institutions of their tax exempt privileges.

The report illustrates that if the property of all private institutions in Massachusetts "had been taxed in 1968 at the local rates and the reported valuations, they would have been taxed for $50.7 million." The report continues, "for purposes of argument only, and not as a realistic assumption, the private universities and colleges can be viewed as relieving the Commonwealth of the burden of educating some 77,000 Massachusetts residents." Using a 1971-72 estimate of an average tax-supported cost (after tuition and fees) of $1,400 per student for operating the state's higher educational system, then the cost of educating 77,000 additional students would have approximated $85 million annually.

It is noted that "an obvious, if precarious, conclusion to be drawn from these data could be that the subsidy now granted to private universities and colleges in the form of tax exemption is greatly exceeded by the prospective cost of shifting the entire higher educational burden to the state."

The report further attempts to discover whether a relationship exists between high tax rates in cities and exempt property and presents a frequency distribution table comparing percentages of exempt real estate valuations and full-value tax rates for 108 towns in Massachusetts in 1970 and 37 towns in 1969. The findings suggest that for each level of exempt percentages there is wide variation in the range of full-value tax rates. In summarizing the table, the report concludes that a large percentage of exempt of total valuation property is not per se a liability in terms of the tax rate.

Cambridge and Boston are used as illustrations. Cambridge has a slightly higher percentage of exempt area than Boston, and fairly close to the same percentage of exempt valuation, yet Boston's full-value tax rate is more than double that of Cambridge. The authors conclude that "clearly, it is other factors which determine the tax rates of these two cities. The fact that many cities and towns have high tax rates with relati-ely low levels of exempt property affirms the view that the explanation of high tax rates must be solved elsewhere."

The possibility that an exempt institution, even where it occupies potentially tax producing land, may be an asset rather than a liability due to its salutary economic effect on the community in which it is located is discussed. "There is the possibility that the burdens imposed by the presence of exempt property in the municipality can be offset by economic benefits and effects on tax valuations which the institution can bring."

The report suggests a more critical approach into the policy of taxing institutions must be examined on a long range basis to see whether in the long run it will be an asset or a liability on a net-cost benefit basis.

28. "Property Tax Exemption in Boston." Excerpt from Institutional Property Tax Exemptions. Boston: Massachusetts Taxpayers Foundation, 1971. pp. H-1 through H-23. (OUT-OF-PRINT)

The purpose of the chapter was to examine data on the impact of tax exempt property on the City of Boston tax base and tax rate. The belief that Boston's many colleges and schools are responsible for eroding the city's tax base was indicated to be a prevalent misunderstanding.

The authors observe that the percentage of exempt valuation in Boston had increased from 28.2 percent in 1950 to 53.7 percent in 1970, e.g., more than half of all Boston property values are exempt (in dollar terms, in 1970, nearly $1.9 billion of the $3.5 billion assessed total real and personal property was exempt.)

Two-thirds of this exemption was public property divided among property of the United States (6 percent); of the Commonwealth of Massachusetts (21 percent); of the City of Boston (34 percent); and of the Housing Authorities (6 percent); resulting in total public exemptions of 67 percent. The literary and scientific institutions (including the institutions of higher education in the city) owned 17 percent of the exempt property, with the remaining 16 percent in charitable and benevolent institutions, houses of religious worships, and other private exemptions. This meant that the literary and scientific institutions had grown from owning 10 percent of the exempt property in Boston in 1950 to owning 17 percent in 1970--while public exemptions had decreased during this period from being 75 percent of all exempt property to 67 percent.

When computed by land area, total public exemption amounted to 79.7 percent of the exempted land, including property of the United States (4.0 percent), of the Commonwealth of Massachusetts (42.3 percent), and city property (33.3 percent). Private exempt property totaled 20.4 percent, of which literary and scientific institutions amounted to 6.1 percent and other institutions the remaining 14.3 percent (much of the Commonwealth of Massachusetts' exempt land was due to the inclusion of Logan Airport).

The report concludes: (1) over the period of 1950-1970, private institutions have been responsible for very little of the erosion of the city's tax base in terms of land area; (2) most losses of land area to exempt uses have been for governmental purposes; (3) the considerable growth in exempt valuations of private institutions has been almost entirely in buildings and other improvements, most of it on previously tax exempt land; (4) buildings acquired by exempt institutions and removed from the tax rolls have not been a significant factor in the total growth of exempt valuations; and, (5) generally, the recent growth of private institutions has been through intensified land use and not at the expense of potentially tax producing land.

D. EMPLOYMENT MULTIPLIER STUDIES

The following four studies review the question of employment multipliers; that is, how many jobs are created by the creation of one job at a higher education institution. This question is the central theme of these studies while other studies in this bibliography also explore the questions both of employment multipliers and income multipliers but within the framework of the larger question of other economic relationships.

29. The Impact of the University of Illinois on the Champaign-Urbana Economy. M. J. Lee. Unpublished Master's Thesis. Urbana, Illinois: University of Illinois, June 1966. 69 pages.

This study concludes that the benefits which accrue to the community due to the existence of the University of Illinois include the following: Enriched social and cultural opportunities, increased educational opportunities at a low cost, economic stability, employment and income, and direct revenues.

The author attempts to assign dollar values to the impact of the university of municipal revenues and expenditures. The findings reveal that there were an additional 1,184 jobs created in Champaign County for every 1,000 new university employees and an estimated $1,015 additional income to the county for every additional $1,000 of University payroll.

30. "The Economic Impact of a Small College." Based on an Unpublished Master's Thesis for the University of Maine by Richard Vizard. New England

Business Review. Boston, Massachusetts: Federal Reserve Bank of Boston, September 1967. Pages 11-14.

The article studies the economic impact made by Husson, a small private college, on the Greater Bangor Area (GBA) in Maine, including effect on local employment and income. The effects of the college are compared to similar effects from a hypothetical manufacturing facility. It is based on a Master's Thesis listed as Item 41 is this bibliography.

The 1966 enrollment at Husson was 1,150 students (three-quarters of them from outside of the local area, and 22 percent of those from out of state); faculty, administration and staff of the college totaled 83 persons. Based on questionnaires and survey results, total spending in the GBA attributable to the college, staff and students, amounted to $2.26 million. (Estimated average supplementary expenditures for a student living in a dormitory amounted to $641 per year, and owning or operating an automobile added an average of $86.)

When funds generated in the GBA and when the students whose families lived in the GBA had their expenditures subtracted from the total spending, an "export income" of $1.48 million remained. Based on an estimated 2.1 income multiplier for higher education and for student spending, the $148 million then was estimated to yield $3.14 million of total income to the GBA economy.

The equivalent bringing of export funds of $1.48 million to the GBA would also be similar to creating a hypothetical shoe company which provided employment for 335 workers. Because the employment multiplier for a shoe company in the GBA was estimated from other research to be 0.33, the shoe factory with 335 employees would indirectly have created 111 additional jobs.

By comparison, assuming the college's indirect impact on local employment was the same as the shoe company (e.g., 111 added jobs), an equivalent educational employment multiplier of 1.33 would have held because the college employed 83 faculty and staff. In other words, for every three new jobs in the shoe factory, one new job was created indirectly; for every three new jobs at the college, four additional jobs would be indirectly forthcoming.

As the comparisons show, income and employment multipliers vary among industries, with the multiplier depending upon the average amount of spending locally. Moreover, if this same comparison were made for a state or regional economy, the impact of a factory might be considerably greater than the impact of a relatively small college where the majority of the students reside locally.

31. "The Economic Impact of a University on Its Local Community." Ernest R. Bonner. Journal of the American Institute of Planners, Vol. XXXIV, No. 5 (September 1968). pp. 339-343.

This article attempts to determine the total economic impact of the University of Colorado on its local community of Boulder, Colorado. The study concludes that: (1) each dollar of increased spending by the university eventually stimulates total community production of $137; (2) 10,000 new students added to the university would require 3,000 new faculty and staff and 900 other employees in the local sector; and, (3) student expenditures of $2,000 per student can be considered an approximate annual average. A further conclusion was that if the State of Colorado also experienced a multiplier effect from the university by the same ratio as did the community (1.37), then the university would generate a $1 million annual impact on firms throughout the state.

Footnotes in the study refer to six other case studies of the economic impact of a university on its community.

32. "The Income and Employment Impact of the University of Alabama on Tuscaloosa County." Danny Bellenger. Alabama Business. Published by the Center for Business and Economic Research, Graduate School of Business, University of Alabama. Volume 41, No. 10. June 15, 1971. 3 pages.

This article attempts to determine the extent to which the University of Alabama has an economic impact in Tuscaloosa County and whether it is great enough to be a controlling force.

The employment multiplier concept, computed by the location quotient method, is used with two adjustments: one involves income variations among employment groups, and the other includes off-campus student spending as part of the total impact of the university.

The major theoretical tool used in analysis is the export employment multiplier concept, indicating that "export industries are those which sell their production outside the boundaries of the region, thereby causing an inflow of money into the region." The impact above the direct export employment is considered derived impact.

The author indicates "the significance of dividing the area's employment into export and derived lies in the discovery of the normal ratio between the two sectors for a given period of time. This ratio can be considered a functional relationship between the two sectors and used to analyze various aspects of the regions's economic life."

Based on separate estimates of the location quotient for eighteen sectors of the economy, the report estimates that the total export employment is 10,340 employees out of a total county employment of 44,950 and concludes that the export employment multiplier is thus 4.35.

To account for the disproportionately low salaries of university employees, due to the large number of students, graduate, and research assistants as well as secretaries and maintenance people, the author reduces the export employment of the university by 1,208 or 27 percent; in addition, to take into account the impact of off-campus students spending, the author estimates that there is enough spending to support approximately 200 employees. Thus, the export employment associated within the university originally calculated as 4,435 (3,861 employees, and 575 construction workers) is reduced by 1,208 employees to account for the low salaries, and increased by 200 employees supported by off campus purchases, resulting in an export employment of the university of 3,438.

Based on a total employment in the county estimated to be 14,955, the report estimates approximately one-third of the total economic activity within the area is supported by the university.

E. HEALTH SCIENCES STUDIES

The following two studies single out the health sciences. One is a nationwide survey of student expenses and income, while the other reviews the regional impact of expenditures by a medical center.

33. How Health Profession Students Finance Their Education. U. S. Department of Health, Education and Welfare. Public Health Services, Health Resources Administration, Bureau of Health Resources Development, Division of Manpower Intelligence. Washington, D. C.: October 1973, DHEW Publication (HRA) 74-13. 56 pages.

The report presents results of a survey of more than 14,000 students in 126 health professions schools during the 1970-71 school year. The report contains findings on the characteristics of the students, including average expenses, sources of income, relationship between income and expenses, and average indebtedness.

Significant findings include highest average annual expenditures of between $6,231 and $6,710 was for students of dentistry, podiatry, and osteopathy, while the lowest, $3,739, was for pharmacy students. The average expenses for all medical students amounted to $5,529, of which $1,263 was for lodging and living quarters, $1,758 for school expenses, $956 for board, and $1,552 for all other expenses.

Average annual income ranged from $3,008 for pharmacy students to $5,115 for dental students. Across all professions, 28 percent to 54 percent of the students worked an average of 14 to 20 hours per week. About one-half of the students received contributions from their parents with average amounts ranging from $1,245 to $2,159. Roughly 35 percent of all students reported receiving federal or state scholarships or other non-refundable grants. The majority of the students reported some indebtedness. Of the students in schools of pharmacy, 56 percent reported debts as did 65 percent of medical students and 79 percent of osteopathic students.

Spouses tend to contribute more than twice as much income to the students as any other source, with amounts ranging from $3,286 to $4,905, while between 36 percent and 44 percent of most students received spousal help depending upon discipline. On average, nearly 80 percent of the sources of income for all health sciences students was from non-refundable sources, including the student's own earnings and savings, spousal and parental contributions, while approximately 20 percent was from refundable funds, including various private and public loans.

One-third of the medical students and one-fourth of the dental students came from families of incomes of $20,000 or more per year while 27 percent of medical students and 29 percent of dental students came from families with incomes of less than $10,000 per year.

34. "The Impact of Public Institutions on Regional Income: Upstate Medical Center as a Case in Point." Craig L. Moore. Economic Geography. Vol. 50, No. 2 (April 1974), pp. 124-129.

The study describes problems associated with measuring the impact of public institutions on regional income and presents an empirical analysis of the income accruing to the City of Syracuse, New York, due to the operation of the Upstate Medical Center. The center contained a 350 bed hospital, while the entire medical complex had a 700 student enrollment, 2,500 employees and 550 faculty members.

The author states that institutions have three major sources of revenues: payments received for services rendered, appropriation of public funds, and contributions. He indicates that while the geographic source of receipts from the sale of services and contributions pose no special problems, analysis of public appropriations is more complex. To assist in this calculation, the author provides a series of equations to determine net tax revenues from the region, the portion of funds flowing into the region, the initial impact of regional income, and the regional trade multiplier.

The operation of the center's hospitals and the clinics in fiscal 1971 generated $14.7 million of which $7.4 million was from sources outside Syracuse and $4.4 million was from patients outside of Onondaga County (the home county of Syracuse). Of the total $36.5 million revenues of the medical center, $30.0 million was from outside of Syracuse, and $22.6 million from outside Onondaga County.

An analysis of all wage and salary records indicated that 63 percent of all wages were paid to city residents, 30 percent to county residents, and 7 percent to persons outside the region. Purchases by the medical center amounted to 29 percent from firms in Syracuse, 11 percent from firms that maintained offices in Syracuse but were national corporations who manufactured elsewhere, 3 percent from firms in the county excluding the city, and 57 percent from firms outside of the county. In total, of the $35.4 million spent by the medical center, $18.8 million was received by firms or individuals in Syracuse.

In summary, 62 percent of the revenues of the medical center came from sources outside of the County. Using an equation to measure the propensity to consume locally produced goods and services, with a factor to account for community size as measured by population, produced a multiplier of 2.63. As a result, approximately $15.4 million spent in Syracuse actually generated over $40.5 million in income for city residents.

The article concludes that large public institutions have the capacity to generate millions of dollars in personnel income and employment through interregional trade. Not only do they add to the export base of a community, but they also provide services previously purchased outside the region. This has the effect of raising the propensity of households to consume locally produced goods and services which in turn increases the multiplier and strengthens the flow of income.

IV. General Economic Impact Studies

A. ECONOMIC RELATIONSHIPS: NON-ACE STUDIES

Most of the following seventeen studies predate the completion of the ACE survey manual. These studies for the most part show considerable ingenuity and originality on behalf of the institutions and the authors in examining the question of economic relationship. Most of the studies concentrate on expenditure and income information, describing only that which was easily measurable.

35. The University of Rhode Island as an Economic Factor in the Community. Niels Rorholm. Agricultural Experiment Station. Misc. Publication 57. Kingston, Rhode Island: University of Rhode Island, June 1960. 8 pages.

This report measures the direct economic effect of the University of Rhode Island on South Kingston in the calendar year 1959. In 1959, the university employed 990 persons (both full and part time). Student enrollment was approximately 2,800 undergraduates, 300 graduates, and 1,000 summer school students.

Employee earnings in 1959 totaled $4.3 million with 70 percent of the university payroll paid to employees who, at the same time, were residents of Kingston. This payroll was almost as large as that of all industry and trade combined in South Kingston.

Student expenditures in South Kingston totaled $565,000, broken down as follows: 15 percent for rent, 45 percent for food and beverages, 6 percent for clothing, 12 percent for automobiles, 7 percent for drugstore items, and 14 percent for other items.

According to the author, 80 percent of the town's revenues were derived from real estate taxes. In 1959, 4,286 taxpayers who were not associated with the university made an average real estate tax payment of $170 per person. The author finds that "even though working at a tax exempt institution, employees of the University of Rhode Island share fully in carrying the expenses of their town."

36. The Contribution of Rutgers (The State University) to the Economy of The City of New Brunswick during the Calendar Year 1959. New Brunswick, New Jersey: Bureau of Economic Research, Rutgers-The State University, April 25, 1961. Mimeographed. 41 pages (OUT-OF-PRINT)

This report presents data obtained from questionnaires to the administration, faculty, staff, and students about spending in the New Brunswick trading area during the year 1959.

Based upon a faculty count of 1,339, a staff of 1,372, and a student body of 8,630, the study estimated "the minimum value of Rutgers to the New Brunswick trading area" in 1959 was over $20 million. In addition, another $20 million was expended elsewhere outside the New Brunswick area. The above totals do not include nearly $2 million in payments to the university for tuition, etc., nor do they include expenditures by the faculty, staff, or students for durable goods, or amounts expended by the university for construction. Average annual expenditure by the faculty was $5,480, by the staff $5,620, and by students $1,780.

The report states that this income was a net addition to the income of the community. Moreover, it is pointed out that the university makes other major non-measurable economic contributions to the economy by maintaining university buildings in excellent condition, and by the relatively stable nature of a university's expenditure in time of recession or depression--"universities do not go out of business during economic slumps". It was claimed that there were few, if any, types of business, professional, or service occupations that did not benefit directly as a result of the expenditures.

37. The Economic Value of a College to its Community. Dr. J. H. Foegen. Winona, Minnesota: Department of Business Administration (now Department of Business Administration and Economics), Winona State College, November 1964. 33 pages. (Mimeographed) (OUT-OF-PRINT)

The basic economic background against which education as a Winona industry, and Winona State College as a substantial part of that industry, was described by the author is as follows: A community population that has been stable for a number of years at around 25,000, a similarly stable labor force of around 10,000, and a manufacturing component of about 40 percent of that labor force. During the period 1958-64, Winona State doubled in size: in 1955, enrollment was 748; in 1964, it totaled 1,860.

The report states the economic value of the institution to the community can be approached in a number of different ways: first, expenditures of the college, both capital and operating; second, man hours of work contributed to the local economy by students working part-time; and third, the retained purchasing power represented by local high school graduates who might go to college elsewhere if the state college were not locally available.

To determine capital expenditures, the report shows contractors' estimates of the amount of materials purchased locally for each of the major capital construction projects which totaled $2.3 million.

The author argues that unlike spending on capital items, payroll money stays almost 100 percent in the local economy. During the fiscal year ending June 30, 1963, salaries paid by the college to all personnel amounted to $1.1 million. During the same period, operating expenses to the college amounted to some $160,000, of which an estimated $91,500 was spent in Winona.

Based on the results of an April 1964 survey, stores and other retail establishments in Winona received more than $680,000 a year spent by students during the nine month school term. Of the 1964 enrollment of 1,442 students, 360 were surveyed with 256 responding. Students spent $246,000 on food and beverages, $119,000 on clothing, $77,000 on gasoline, and $68,000 on entertainment. The remaining $163,000 was spent for miscellaneous goods and services.

The author estimates that there were a total of 8,634 visitor days and an average spending of $5.00 per each visit, or roughly $43,000 per school year.

Based upon results of a November 1962 survey, 56 percent of the student body worked an average of 18.3 hours per week at an average wage of $1.05 per hour. After accounting for commuting students working in nearby towns, it was estimated that $600,000 in annual payroll was earned by the students at the college.

According to the author, in 1963 some 130 of the 265 high school graduates planning to attend college would attend school at Winona State. If these young people had gone "elsewhere to college, at an estimated average cost of some $2,000 per year per person, this would represent annual drain out of Winona of about $600,000."

38. The Economic Impact of Portland State College Upon Portland, Oregon. A Study Conducted under the Auspices of the Urban Studies Program at Portland State College. Contributing personnel: Dr. Ray M. Northam, Dr. Joseph Blumel, Mr. Wesley Myllenbeck, Miss Linda Tilson, Mr. Michael Rancich. 1965 (approximately). Mimeographed. 25 pages (OUT-OF-PRINT)

This is a study of the direct economic impact of Portland State College, based upon results of questionnaires administered to students in the fall quarter 1964. Faculty and staff expenditures are arrived at by extrapolating income categories of expenditure ratios used in the Life Study of Consumer Expenditures (not footnoted or referenced).

The student enrollment of 7,587 expended $9.3 million of which $5.1 million represented expenditure gain to the immediate community. The $9.3 million equaled 1.3 percent of the value of all retail trade in Portland in 1958. Mean quarterly expenditures by students (including housing) was $657, while modal value equaled $453.

Based upon a staff payroll of $0.7 million (300 persons) and a faculty and professional payroll of $3.7 million (430 persons), estimated expenditures were $0.6 million for staff and $3.3 million for faculty. These estimates were based solely upon wage and salary incomes, and not upon family incomes. There is no breakdown as to geographic location of the expenditures, nor is there any estimate of expenditures by the institution itself beyond that of payroll. Average staff annual expenditure was $2,000; average faculty expenditure was $5,100.

39. Contribution of Northern Michigan University to the Economy of the Marquette Area. Kalmar E. Stordahl and Charles N. Pappas. Marquette, Michigan: Office of Institutional Research, Northern Michigan University, May 1966. 11 pages.

This report estimates the direct economic contribution of Northern Michigan University to the Marquette community based upon expenditures made within the City of Marquette and Marquette County by the university, administration, faculty, staff and students during the 1964-65 fiscal year. Data on expenditures was obtained by a questionnaire returned by 132 of the 487 faculty and staff and 1,011 of the 3,556 enrolled students. (The questionnaire forms are not included.)

The total expenditures by the university, faculty and staff families and students totaled nearly $10 million. This did not include expenditures by construction contractors, nor by persons attracted to the community for conferences, conventions, workshops or athletic events held on the university campus. Also excluded are all payments by faculty, staff, and students to the university for tuition, books, housing and food.

The report provides an expenditure analysis of twenty categories of non-durable and three catergories of durable goods and services for faculty, staff and students. Average expenditure made within the Marquette area by a full-time employee at the university was estimated at $9,300, of which approximately $5,600 was for non-durable goods and the balance for durable goods. Average expenditures by students was approximately $1,000 of which $900 was for non-durable goods and services. Faculty and staff bank deposits totaled $726,000 and student bank deposits totaled $723,000.

The appendix to the report provides an expenditure analysis of twenty non-durable goods and service categories by geographic area.

40. The Economic Impact of Texas Technological College on Lubbock for the Years 1956-57 through 1965-66. Jerry Mike Hood. Unpublished Business Administration Master's Thesis. Lubbock, Texas: Texas Technological College, August 1966. 97 pages.

This report determines the economic impact of Texas Technological College upon its host city of Lubbock during the ten year period 1956-57 to 1965-77. During this period, enrollment increased from 8,055 to 16,305 students.

Four areas of economic expenditures were considered: students, the college, athletic events, and visitors. To assist the reader, eleven terms used in the report are defined. These include: auxillary enterprises, budget, campus visitors, current expenditures, current funds, effective buying income, general administrative expenditures, instructional and departmental research expenditures, out-of-town football and basketball fans, and student fees.

The student expenditure data was based upon previous studies available to the author. Expenditure groups and amounts in 1965-66 included off-campus men ($2,197), on-campus men ($1,943), on-campus women ($1,796), and married students ($4,000). According to the report, the average student spent $2,127 during the 9 month school term. Estimated spending for all students increased from $14.9 million in 1956-57 to $38.5 million in 1965-66.

College expenditures were divided into three groups: administrative salary ($634,000); instruction and departmental research salaries ($5,914,000); and other salaries ($3,635,000). Becaues, according to the author, it was impossible to determine what proportions of the salaries were not spent in Lubbock, it was assumed that the entire amount stayed in the local economy. When total salaries, exclusive of student salaries, were calculated, the total was an estimated 1964-65 expenditure of $9.7 million.

Based on the assumption that all wages of construction company employees were spent in Lubbock, while material costs and profits made by construction companies were not, it was estimated that $3.7 million was spent in Lubbock by construction employees during the 10 year period 1955-1956 to 1965-66. This is based on a breakdown of construction cost as follows: 65 percent for materials; 32 percent for labor; and 3 percent for taxes and profit.

Athletic event expenditures were based on the results of a questionnaire mailed to season ticket holders for football and basketball. The author estimates that each fan spent an average of $18.91 for each football game, and an average of $6.52 for each for each basketball game in 1965-66. This added $1.2 million to the local economy due to athletic events.

Expenditures of campus visitors were based on estimates that each person who did not stay overnight spent a daily average of $10.48 (composed of $2.89 for food, $0.93 for gas and oil, and $6.66 for miscellaneous shopping). Those who stayed overnight spent an estimated $19.09 ($3.93 for food, $5.78 for lunch, $1.68 for gas and oil, and $7.74 for miscellaneous shopping). Altogether, in 1965-66, 25,072 visitors came to the campus, with approximately one-half staying one day or less, and the remainder staying one day through six weeks to attend conferences. Collectively these persons added $1.1 million to Lubbock economy.

Appendices to the report include the tabulations from the questionnaires mailed to football season ticket-holders.

41. The Economic Impact of Husson College on Bangor, Maine. Richard E. Vizard. Unpublished Master of Sciences in Business and Economics Thesis. Orono, Maine: University of Maine, the Graduate School, January 1967. 68 pages.

The thesis discusses the income stream of cities and the importance of export industries to the local economy. It shows that an institution of higher education is a good source of imported funds. The study is based on the results of a 1966 survey of student body and employees of Husson College. Enrollment was 1,064 students and employment totaled 69. The host City of Bangor had a population of 39,800 and a labor force of 12,208. The report concluded that Bangor was not an industrialized economy but a highly commercialized area serving some 300,000 persons.

Total expenses in Bangor by the institution in 1965 totaled $1.8 million of which 67 percent could be considered as imported into the area. Applying an assumed income multiplier of 2.0, the college accounted for $2.4 million in spending. Student supplementary expenses totaled $1.2 million. Using an employment multiplier of 2.9, a total of 129 jobs in Bangor could be attributed to the operations of the college. By comparison, the college had the same economic impact on the Bangor economy as a shoe company with annual sales of $5.7 million and 391 employees. (See also Item 30 in this bibliography for an expanded discussion of this subject.)

Based on the results of an employee survey, the following distribution of employee expenditures was calculated: food, 26 percent; housing, 29 percent; clothing, 5 percent; entertainment, 4 percent; transportation, 19 percent; medical and personal care, 10 percent; interest and contributions, 6 percent; and miscellaneous, 1 percent. The average expenditure made for housing by owners was $1,645 and for renters $822. Clothing purchases totaled an average of $343 and laundry and dry cleaning $71. Transportation expenses, including purchases of new or used cars, averaged $804. Of the survey sample, 26 percent of the employees reported the purchase of a car during 1965.

Student expenditures totaled $1.2 million, distributed as follows: food at home, 10 percent; in restaurants, 10 percent; housing, 20 percent; clothing, 10 percent; entertainment, 13 percent; transportation, 24 percent; medical and personal care, 5 percent; and miscellaneous, 8 percent. The sample showed that 49 percent of the student body owned automobiles and spent an average of $189 on transportation.

Expenditures on a per capita basis are also provided: in total, and on average, the Husson College students spent $831 for tuition and fees, $986 for food and housing, $200 for personal expenditures, medical, laundry and clothing, $100 for text books and supplies, $158 for recreation, and $115 for miscellaneous expenses. Of the student body, 92 percent were from outside of Bangor.

42. A Study into the Costs and Economic Contributions of St. Cloud State College to the City of St. Cloud. Gerald K. Gambers. St. Cloud, Minnesota: St. Cloud State College, Department of Economics, May 1967. 31 pages.

The purpose of the study was to ascertain, for the year 1966, the property tax revenue lost by the City of St. Cloud as a consequence of the expansion of St. Cloud State College during the previous 15 years and to estimate other related costs of the city and, by comparison, to measure the benefits accruing to the city. According to a 1962 study, 44.2 percent of the total property in the city was tax exempt.

The study indicates that the city would have received an additional $15,794 in real property tax revenue for the taxable year 1966, if 135 residential propreties purchased by the State of Minnesota for expansion of SCSC had still been on the tax rolls. This property tax revenue lost by the city amounted approximately to one percent of the 1966 tax levies.

Based on responses to a questionnaire sent to former property owners to determine whether or not the former owner had built a new residence within the corporate limits of St. Cloud, the author estimates (1) that the city's property tax revenues lost were reduced by as much as 30 percent; and (2) that the new residents added as much in new property tax revenue as the city lost on the corresponding old property removed from the tax rolls.

To measure benefits, the author developed a measure called "Gross City Product," or GCP. This was the income of the city estimated by multiplying the per capita gross product of the United States (for each of the ten years 1965 through 1966) times the city population. The assumption was then made that city revenue was an indirect function of the GCP. Using the least squares method of linear regression, the report found that an increase of one dollar in GCP generated an increase of 2.6717 cents in city revenue.

Based on the relationship between GCP and city revenue, the author claims that approximately $359,000 was the indirect contribution of the St. Cloud State College to the city revenues. By comparison, he indicates that the lost $15,794 property tax revenue was 0.87 percent of the 1966 tax levies and 0.47 percent of the 1966 total city revenue.

Questionnaire results from a five percent sample of the student body indicated that the 9-month average expenditure of the 6,752 students totaled $4.5 million. Averages of all student expenditures included single students living off campus ($885) and married students residing in St. Cloud ($1,651); in addition, the 2,483 summer students expended an additional $500,000. When spending by faculty, staff, and the institution are added to the student expenditures, the total spending in the city was approximately $13.4 million.

Appendices to the report include the questionnaire sent to former property owners, the student expenditures survey, as well as the explanation of the income-expenditures approach to the determination of the level of income and employment, including the marginal propensity to consume and its multiplier.

43. The Economic and Financial Impact of the Johns Hopkins University, Hospital, and Applied Physics Laboratory on the State of Maryland and the City of Baltimore. Baltimore, Maryland: Public Relations Office, The Johns Hopkins University, 1965 (updated, December 1967). 1965 report, 9 pages; 1967 report, 10 pages. (OUT-OF-PRINT)

This report studies the economic impact of The Johns Hopkins University, the Johns Hopkins Hospital, and the Johns Hopkins Applied Physics Laboratory. Total funds expended for these three operations for the fiscal year 1964-65 were estimated at $116 million. With a total employment of 10,117 persons, Johns Hopkins comprised the fourth largest **private** employer in Maryland.

The total funds expended for the three operations for the fiscal year 1966-67 was $133 million. With a total employment of 11,774 persons, the Hopkins complex was still the fourth largest employer in Maryland.

The survey was based on direct payroll expenditures, current fund expenditures, expenditures paid to local suppliers and vendors, a survey of "out-of-town students" to determine their economic impact on the community, and expenditures of students in medical institutions.

At the time of the 1967 survey, the institution enrolled 1,810 undergraduate students, 1,406 graduate students, 666 students in the Schools of Medicine, Hygiene and Public Health, and an additional 6,154 students in evening colleges.

44. Analysis of Economic Effects - Wesleyan University. Prepared for Wesleyan University, Middletown, Connecticut. Washington, D. C.: Robert Gladstone and Associates, March 1968. 47 pages. (OUT-OF-PRINT)

The report analyzes primary and secondary effects because of functional, economic or historical relationships of Wesleyan to Middletown, and evaluates total income and employment to establish the relative magnitude of Wesleyan's impact.

In 1966-67, the university employment totaled 625 faculty full-time, and 180 persons part-time. During the period 1962-66, university employment gained at an annual average rate of 7.7 percent. Of the employees, 68 percent (425) lived in the Middletown community and an additional 20 percent lived in contiguous communities. Student enrollment was 1,535 for the study year. During the academic year 1966-67, the cost of operations at Wesleyan totaled $15.3 million, of which more than $6 million was added to the Middletown economy as a result of a direct wage and salary payments and local purchases of goods and services. Of the non-wage expenses of the institution, $3.9 million was spent on current operations while $5.5 million was spent on construction renovation, land acquisition or other capital outlays.

Of the university's total operating expenditures, 22 percent was paid to Middletown merchants and suppliers. Of the capital expenditures, 36 percent occurred in the city. Overall, 30 percent of all operating and capital expenditures occurred in the City of Middletown, 3 percent in the mid-state planning region, 37 percent outside the region but in Connecticut, and the remaining 30 percent outside of Connecticut.

Undergraduate and graduate students spent an estimated total of $1.4 million exclusive of direct payments to the university or to fraternities. Undergraduates spent a total of $640, and graduate students a total of $1,800 per nine month school year. Of the $960,000 in undergraduate expenditures, 70 percent was spent in Middletown (95 percent of the undergraduates were housed either in university dormitories or fraternities). For graduate students, 80 percent of their $410,000 total expenditures was spent in Middletown. The report also estimates that 40 percent of the $200,000 expenditures by fraternities was in Middletown. Overall, the direct economic effect of Wesleyan on Middletown totaled $7.2 million.

The indirect economic effects included secondary employment and income added and multiplier effects in the form of additional personal income generated through recirculation of University related dollars within the local economy. To calculate this amount, it was estimated that 70 percent of each dollar of gross personal income was expended in the Middletown economy, with the remaining 30 percent diverted to tax payments (13 percent), savings (5 percent), and current consumption made at locations outside the city (12 percent).

The 70 percent available for local consumption was distributed as follows: retail stores (42 percent), retail services (7 percent), professional services (10 percent), and housing (11 percent). The wage content of these items, which became the basis for additional personal income generation, was estimated as follows: retail sales, 12 percent wage content; retail services, 25 percent; professional services, 80 percent; shelter or construction services, 50 percent; and wholesale sales, 7 percent.

Based upon a calculation to determine the income available for recirculation, i.e., the multiplier, the study calibrates that the income multiplier would be 0.28 for each dollar of initial gross income. Thus, of the \$4.4 million of university wage and salary payments to Middletown residents, \$1.3 million (30 percent) was diverted from the local economy in the form of taxes, savings, and current consumption expenditures at other locations while the multiplier of 1.28 times the initial \$4.4 million payments resulted in the total income added to the city of approximately \$5.6 million.

Tables in the report disaggregate wage factors--individual and institutional--by types of purchases. Appendices include the questionnaire forms used by the students.

45. A Study of the Economic Impact of Jacksonville University on Duval County and the State of Florida for the Year 1967. Percy L. Guyton and Stuart W. McFarland. Jacksonville, Florida: Jacksonville University, June 1968. 24 pages.

The purpose of the study was to determine the direct and indirect economic impact of Jacksonville University and its students, faculty, administration, and staff on Duval County and the State of Florida in the calendar year 1967 and to estimate the amount of local and state taxes generated directly and indirectly.

The study is based upon surveys of the faculty, administration, staff, and students. In 1967, student enrollment totaled 2,600, of whom 582 lived on-campus in dormitories and 101 were classified as non-resident living off-campus. There were 137 faculty, 32 administrators, and 76 staff. Collectively, the economic impact of these university persons and the university itself totaled \$15.1 million.

The authors indicate that the faculty, administration, and staff reported paying over \$83,000 a year in state and local taxes, and an additional \$24,000 in retail sales taxes. It was estimated that the student contribution to Florida sales taxes totaled \$100,000.

Average student expenditures for a seven month year totaled \$1,067, divided as follows: food, \$270; clothing, \$127; transportation, \$184; drugs and cosmetics, \$72; sundries, \$92; recreation, \$139; medical and dental, \$22; and other, \$163. Total expenditures by the students living in dormitories totaled \$628,000.

The report uses the economic multiplier of 2.5 and claims it was accepted as a reasonably conservative ratio; when this multiplier used, the dormitory residents' economic impact was totaled \$1.6 million.

The non-resident student average expenditures for 9.75 months totaled \$3,288, and the students living off-campus with spouse or relatives averaged \$1,391. Collectively, and including the multiplier, these latter two groups had total economic impact of \$909,000 and \$6,864,000. The authors show that the grand total of economic impact of the student body was \$9.3 million.

The report finds that the median take-home family income of faculty was $11,000. Gross family income totaled $13,250. On average, faculty member's family income was 70 percent from Jacksonville University and 30 percent from other sources, such as spouse working full or part-time, as well as "moonlighting" by faculty members. When the 30 percent from non-university sources was subtracted from average family income, the faculty members take-home pay from the university was computed at $7,700. Using the economic multiplier of 2.5, and deducting 4 percent for faculty expenditures out-of-state, the total estimated impact of the faculty was $2.5 million.

For administrators, the average family income after deductions, was $11,000, with 96 percent of the average family's take-home pay coming from the university. When the same computation as used for the faculty is followed, the total economic impact of $0.8 million for administrators is calculated.

For staff, median income was also $11,000, with staff members reporting an average of 67 percent of family take-home pay from sources other than the university. Using the same multiplier as for the faculty, the economic impact of the 76 staff members totaled $0.3 million.

46. The Economic Impact of the University of South Florida on the Tampa Bay Area. William E. Worley and Dean P. Hampes. Tampa, Florida: College of Business Administration, University of South Florida, 1970. 33 pp.

This report describes the magnitude of direct economic influence of the University of South Florida upon the Tampa Bay Area for the year 1968-69. The total inflow of funds amounted to $22 million, with state appropriations totaling $14 million of the total operating revenue. This was an increase from $3 million in 1961-62.

The university employed 608 persons in the academic capacity, with an average salary of $14,750. In nonacademic areas, 1,080 persons were employed with an average income of $5,600 per year. Of the 12,000 students at the university, 9,100 claimed Tampa Bay as their home, with the remainder from other parts of Florida and the United States. Of the 9,100 students, 4,300 were living at home during 1968-69.

Based upon full-time equivalent student enrollment, the average college student was estimated to spend $750 per term other than tuition and fees. The report finds that the total expenditures resulting from the existence of the University of South Florida on the Tampa Bay Area was $25 million. When commuting and construction expenditures were subtracted, the total is reduced to $20.7 million; this amounted to 3.3 percent of the total retail sales of the Tampa area.

No questionnaires were designed for use in this study; all data is based upon estimates from secondary sources.

47. The Impact of Appalachian State University on the Economy of Watauga County. Barry W. Elledge. Boone, North Carolina: College of Business, Appalachian State University, September 1971. 41 pages.

This study provides estimates of Appalachian State University's (ASU) impact upon Watauga County for the year 1970-71. In 1970-71, ASU enrollment was 6,665 students (866 were married); there were 369 faculty and 537 staff. The student expenditure patterns were based upon a sample of 248 students.

The report estimates that about $3.89 million in local business and real property and about $1.5 million in local business inventories was due to ASU related business. Expenditures by the university, the student body, faculty, staff and campus visitors amounted to at least $12 million. In addition, ASU faculty and staff contributed about $94,000, either directly or indirectly, in local real estate taxes. About $2.7 million in lendable funds was available because of ASU-related bank deposits. The university accounted for 906 jobs directly, and an additional 1,026 local jobs were estimated to be attributed to the university-related expenditures.

ASU also contributed about $122,000 for teacher salaries or salary supplements for teachers in the local public schools, and provided for the maintenance of the Appalachian elementary school building.

The university, according to the study, was considered to impose costs on the community in four ways: (1) part of the $353,000 city budget for municipal services should be allocated to ASU neighborhoods; (2) the local cost of educating faculty and staff children was about $166,000; (3) about $60,000 in real estate taxes was foregone because of ASU occupied tax exempt lands; and (4) some university auxiliary services were looked upon as being competitive with local businesses. However, the author concludes, "the benefits to the community associated with ASU unquestionably outweighed possible costs of the university to the community."

The study indicates that slightly more than one out of every three persons in the county was directly affiliated with ASU as students or members of faculty of staff households. The arithmetic mean salary of faculty was $12,520; for staff, $5,820. Sixty-five percent of faculty income was spent locally, as was 75 percent of staff income. The weighted average expenditure for all students was approximately $1,100, but did not include tuition, dormitory rental fees, or food.

Expenditures by visitors to the university were estimated and divided into four major groups with average daily spending as follows: (1) business visitors, $25; (2) recreational visitors, $5; (3) educational visitors, $7; and (4) personal visitors, $20. Total spending by the 50,000 campus visitors was estimated at $500,000.

As a result of the restricted geographic area under study, a low multiplier coefficient for ASU related expenditures was used because more money might be spent outside the community. The size of the multiplier coefficient was estimated at 1.9 in the study. The ratio of the university-related business to all local business was about 19 percent.

ASU kept approximately $1 million in local banks in the form of time deposits, and the university's average demand deposit was over $70,000. For faculty, the average time deposit was $2,279 and demand deposit was $450; for staff the average time deposit was $950 and demand deposit was $255.

On the assumption that the campus land would be ideal residential land and could be valued at $10,000 per acre, the 460 acres of campus property was calculated to generate approximately $29,900 in county tax revenue and a like amount for the city if the campus property were alternatively developed for residential purposes.

Appendices to the report include a complete report on student expenditures describing types of expenditures by class standing and place of residence. A copy of the survey form is included.

48. The Impact of West Virginia University on the Morgantown Economy. Daniel C. Hilger and John P. Blair. Research Report MR-8. Morgantown, West Virginia: Regional Research Institute, West Virginia University, December 1, 1971. 27 pages.

This study attempts to answer the question: What amount of total local sales and resulting direct, indirect, and induced income can be traced from its origin to its expenditure in the university community in 1970-71? After adjusting for double-counted employees, there were 1,114 faculty and 3,088 staff at West Virginia University; although not explicitly stated in the report, it was possible to estimate the student enrollment at 13,350.

Average yearly expenditure per faculty family totaled $9,641 and for staff family $5,452. A ten percent sample of faculty and staff received questionnaires. Of the survey population, eight percent had both husband and wife employed by the university.

Survey results indicate that the university expended $3.4 million. Faculty and staff expenditures totaled $27.6 million, student expenditures totaled $16.9 million, and visitor expenditures totaled $0.4 million.

Using ratios of the proportion of average dollar of sales paid to nonlocal firms to direct income generated per dollar of sales for each of ten separate goods and services, the authors calculated the estimated income generated directly by local sales to the university community amounted to $13.3 million. This compared with the $48.3 million of estimated total expenditures by the university community.

Based on "type I multipliers," using a formula of directly generated income plus indirectly generated income divided by directly generated income the authors indicate that for every $1.00 of direct and indirect income earned by households, $0.47 of income was generated through induced effects.

From available expenditure data, the report indicates that 40.6 percent of all selected sales in the greater Morgantown area were accounted for by local purchases of the university community. To test the validity of amount of local purchases, the distribution of faculty and staff and their expenditures was compared with the relevant percentages of estimated total employment and total sales and income.

Appendices to the report include breakdowns of the estimated expenditures for the following segments of the university community: faculty, staff, students, and nonlocal visitors. Faculty, staff, and student questionnaires and a questionnaire used in a survey of businesses and realtors are included.

49. Costs and Benefits of Ball State University to Metropolitan Muncie. John Hannaford (and his urban studies students). Muncie, Indiana: Ball State University, 1971. 50 pages.

This study begins by asking two questions: What difference does a university make to the costs and revenues of local government, and what difference does a university make to local employment and to the growth of local business?

Of Delaware County's population increase of 18,281 between 1960 and 1970, 10,858 were students (6,116 single students and 4,692 married students and their families) and an additional 4,030 were faculty and staff and their families. Of the overall 1970 county population of 127,861, 23,928 were considered to be Ball State students, faculty, staff and their families. Thus, one out of every 5.4 persons in the county had a current affiliation with Ball State directly or through his or her family.

The authors indicate that Ball State University could be an economic burden upon the City of Muncie in three ways: Expenditures for physical services provided by the municipality to the Ball State neighborhood; the added cost of the public schools to accommodate the children of university faculty, staff and students, and, lost property tax revenue that would be collected on the university-occupied land if the university were not located in Muncie.

Based on an average of $28 per capita expenditure for designated public services, and assuming that Muncie spends the same amount on Ball State students, faculty, and staff, as on any other citizens, then the cost of public services was $784,000. Based on the prevailing assessed valuation of agricultural land in the environs of Muncie (because the vacant lands surrounding the city throughout the growth of the city has been agricultural in nature) resulted in a loss to community taxes $52,176 in the current year.

Using the assumption that two-thirds of the children of faculty and staff are of school age, and that the student families have 1.3 children each and the faculty and staff families have 1.1 children each, then there would be a total of 4,243 children, of whom 3,512 would be in public schools. To educate these children, Ball State University paid $483,000 toward the operation of Burris school, leaving a city burden of $9.9 million of which 40 percent was received from the state. When the cost to the city is reduced by 40 percent and then spread over the 18,155 pupils in the system, the average cost is $328. Based on this cost for each of the 3,012 public school children in the community because of Ball State, the authors conclude that public educational cost occasioned by BSU was $1.2 million.

The authors indicate that Ball State University partially offsets its cost to the city by supplying itself and its adjoining area with many of the physical services normally provided by local government, thereby relieving the city of the costs of those services. The expenditures by the university for these services saved the city at least $171,000 per year (in police services, construction of sewers, and street construction and maintenance); this savings represented 22 percent of the estimated $784,000 expended by the city on services for Ball State.

Income to the city includes an estimate of an average annual property tax of $399 per property owner related to the university for a total "origin" of $1.1 million in real estate taxes. Using the assumption that 12 percent of rent is used to pay property taxes, then BSU students paid property taxes in the amount of $429,000 based on student rentals in the 1968-69 school year of $2.4 million. (The authors note that the 12 percent figure is very low relative to the 1960 census data on housing, which shows the national average of 20 percent of rent is used to pay property taxes.)

Based on population figures which indicate that 18.5 percent of the total county population were Ball State students, faculty, staff, and their families, then $363,000 of the $1,963,000 provided by the State to Delaware County as subventions came back to the county because of BSU. Similarly, subventions from the state to the city of Muncie amount to $1,053,000; assuming that university population made up 26.5 percent of the city's population, then $279,041 was paid to Muncie because of people who lived there and were university related.

The authors note that added together, these two sources of revenue amounted to $642,000 paid to local units of government because of university-connected persons who were residing in Muncie and Delaware County. When costs of the university to the city of $2.0 million are subtracted form the direct and indirect receipts to the city from university-related persons of $2.3 million, the university results in revenues and services to local and city government exceeding by $300,000 the total cost of services made necessary by the presence of the university. The authors point out that "this indicates that BSU is a positive net source of revenue to the City of Muncie of almost $20.00 for each student."

Based upon calculations of induced and indirect employment, the authors also indicate that on-campus employment totaled 1,990 jobs plus an additional 1,313 jobs in construction and local basic retail sales due to student, faculty, staff and college expenditures. Moreover, the authors state that basic employment can be multiplied by a factor of 1.9 to give both direct and indirect employment resulting in a total 6,276 jobs in Muncie and Delaware County brought into existence by the presence of Ball State University.

The report concludes that the economic benefits generated by the university significantly exceed cost to the community. In summation, "(1) every 1,000 students enrolling at Ball State create about 413 added full-time jobs for the local economy; (2) each added 1,000 students increase Muncie S.M.S.A. retail sales by $101,000; and, (3) every time an added 1,000 students enroll about $20,000 more is added to the revenue of the local units of government than is added to their cost."

Appendices to the report indicate technical and statistical methods, and the cumulative results of the survey questionnaire administered to a random sample of 440 students in May 1970.

50. Elements Relating to the Impacts of the University of Washington upon the State of Washington and the Puget Sound Region: 1970-71. Robert D. Lamson and June Halsted. Seattle, Washington: Office of Planning Studies, Vice President for Planning and Budgeting, University of Washington, January 1972. 13 pp plus Appendix. (OUT-OF-PRINT)

This report enumerates those elements which form the significant part of the net benefits or costs on the Puget Sound area associated with the University of Washington. Benefits are described in general terms. The net flow of funds and income generating impact of the university upon the state and upon King County are also estimated. The funds are divided into three categories: institutional expenditures, student expenditures, and visitation revenue.

Using the assumption that all university expenditures are made within the state, and that eighty percent of the expenditures are made within King County, the gross flow of funds generated by the University of Washington in 1970-71 was $244 million within the State of Washington and $219 million within King County. When the funds generated through tax revenue within the particular area of concern were netted out, the estimated net flow of funds was $155 million in the state and $179 million within King County.

The cumlative effect of the income upon the area, through the multiplier effect, is 2.2 for the State and 1.4 for King County.

In a section on "the university and taxes," the issue is divided in two categories with respect to taxation: economic efficiency--" whether or not the returns from such a tax supported activity are more or less than the potential returns from the society for the same amount spent alternatively," and, equity--" the impact of taxes upon income distribution over the population of the area."

Based on the assumption that all state funds in support of university activity are ultimately derived from tax revenues, the 1970-71 "tax burden" of the University of Washington was estimated to be in the neighborhood of $88 million statewide and $40 million in the King County area. The university of Washington paid on the order of the magnitude of $3 million in sales taxes during each fiscal year, and other sales taxes of $3.3 million were generated from the $108 million in actual wages and salary paid to university personnel.

Appendix tables further amplify the university's expenditures and revenues associated with the university related visitations. The report claims that for one "visitor day" the economic income attributable to out-of-county visitors, either as visitors to patients or as out-patients at the university hospital, amounts to $20. The same $20 per diem is used also for visitors at sports events and visitors to the campus.

51. "Economic Impact of the University of Oregon, 1972-73." Eugene, Oregon: University of Oregon, Business Office, 1973. 5 pages.

The report summarizes the economic impact of the University of Oregon for the year 1972-73. The university enrolled 15,400 students, had 2,308 faculty members, and employed 1,344 civil service staff employees.

The university's payroll was estimated at $33 million out of a total operations expenditures of approximately $55 million. In addition, student expenditures were estimated to total $17 million and visitor's expenditures $6 million. This resulted in a total of more than $78 million generated into the local economy due to the presence of the university.

The report indicates that because tax monies are allocated to cities on a per capita rate, the presence of the university meant that a possible income to cities in the area would amount to more than $500,000 annually based on a per capital subvention rate estimated at $20.94.

Of the total of the university's income, state funds amounted to $16 million, student tuition and fees $8 million, and the recovery of indirect cost totaled $2 million.

B. ECONOMIC RELATIONSHIPS: STUDIES USING THE ACE METHODOLOGY

The following sixteen studies generally follow the methodology outlined in the ACE study manual (see Item 9 in this bibliography). Some include material which expands the items considered for study in the ACE manual, while others follow the manual more closely without added items. A few of the studies make recommendations for improving the ACE models to meet local conditions.

52. *Report on the Impact of Boston University on the Local Economy of Boston*. Pawan Sawhney and Suren Kaushik. *Unpublished*. Boston, Massachusetts: Boston University, June 1971. 50 pages (OUT-OF-PRINT)

This report estimates the impact of Boston University on the economy of Boston for 1969-70, using the American Council on Education publication, *Estimating the Impact of a College or University on the Local Economy*. The report points out the ACE models are simply linear cash flow formulas and include only that which can be readily counted while omitting qualitative issues such as the effect of the university on the quality of life in the community. (The models include only University expenditures, not revenues, and reflect short term economic impact.) Of particular importance in the study are suggestions for improvement of the ACE models. The appendix to the study contains discussion of each variable used, sources of data, and also assumptions made.

All calculations were based on a nine-month academic year. Enrollment in 1969-70 was 23,826; faculty and staff totaled 3,762. Approximately 51 percent of the faculty and staff of the university lived in Boston, Cambridge, and Brookline.

Business volume of $143 million in Boston was realized because of the presence of the Boston University; this was 1.6 percent of the total value of goods and services produced in Boston. As a result, Boston University was one of the largest single employers in Boston with direct employment of 4,000 persons and the indirect creation of 10,422 jobs from university-related expenditures and business volume, thus accounting for nearly 3 percent of the total employment in the city. On average, 70 percent of the purchases by Boston University occurred in Boston.

Business property (real estate) in Boston worth $32 million was committed because of university-related business volume--this was about 2 percent of the total business property in the city. The credit base of local banks was expanded by university students, faculty and staff to the amount of $32 million annually, and the City of Boston realized tax revenues of approximately $6 million due to the presence of the university.

The report concludes, "...in general, Boston University is a net contributor of sizeable proportion to the economy of Boston in general and to the local government in particular. The government of Boston does not lose any significant amount in revenue on account of tax exempt status of the university property. The university-related influences more than compensate the cost of municipal and public school services attributable to Boston University in the form of direct and indirect tax revenue to the Boston government."

The following suggestions were made to enhance the reliability of the ACE models: business and government models should be revised to incorporate the local purchases by non-local faculty, staff and students; the multi-bank credit expansion multiplier concept should be included in "model B-3" as done in model "B-2" using income multipliers; and state income tax imposed on the university generated income should be calculated.

53. The Impact of the University of Kansas on the City of Lawrence, Kansas. Dr. Darwin W. Daicoff with the assistance of Randy W. Tongier. Lawrence, Kansas: Department of Economics, The University of Kansas, August 20, 1971. 67 pages. (OUT-OF-PRINT)

This report measures the impact of the University of Kansas for the year 1970-71. Enrollment was 17,947 of whom 2,500 were commuters. Full-time faculty totaled 1,100 and full-time staff numbered 1,350. The study is based on the American Council on Education publication, Estimating the Impact of a College or University on the Local Economy.

In an attempt to determine impact, the report indicates two points should be kept in mind: institutions have both positive and negative consequences on their environment, and many aspects of economic relationships are not quantifiable and cannot be measured in dollar terms.

Results from this study are presented in two parts: first, a general discussion, and second, a detailed presentation of the specific models and data used to produce the results.

The findings show that the total local expenditure by the University of Kansas was $42.3 million; the additional business volume, as defined by the ACE manual, totaled $8.5 million. Individuals in Lawrence, other than faculty, staff or students, who received income from university-related expenditures and respent it in in Lawrence, resulted in a volume of $21.1 million. The combination of these three components, university expenditures, merchant purchases, and respent income, totaled $71.9 million. Based on the 1967 Census of Business, university-related total business volume was approximately 26.5 percent of the city's business.

The value of local business property committed to university-related businesses was found to total $10.7 million, and the amount of university-related bank deposits was $7.0 million. The grand total of all university-related revenues received by local governments as $1.5 million (real estate and personal property taxes totaled $0.9 million, state aid to local education was $0.4 million, other state aid was $0.1 million, and other university-related revenues totaled $0.1 million.) Total operating costs of local government services provided and municipal and public school services allocatable to university-related influences totaled $4.4 million. (Author's note: The study did not account for the indirect contributions to local government revenue through property taxes paid on rental properties by students whose demand for local government services, especially schools, would be negligible, if existent at all.)

Real estate taxes foregone amounted to $0.3 million and the value of municipal-type services provided by the college were also $0.3 million.

The report estimated that the number of local jobs attributable to the presence of the university totaled 7,035 (3,450 of which were university faculty and staff.)

The study concludes, "it is evident from this study that the University of Kansas has a tremendous impact on the City of Lawrence, Kansas, both in demand for and use of local resources and in providing business volume, potential for development, and a signficant contribution to life style."

Each of the business, government and individual sector models is detailed in the report. One concluding table provides data on results of a spending and savings questionnaire completed by 496 full-time faculty and staff and 161 part-time employees. The reported average amounts held in bank checking accounts for faculty totaled $653 and for staff $258; bank savings accounts amounted to $1,240 for faculty and $447 for staff; finally, amounts held in savings and loans averaged $2,517 for faculty and $773 for staff.

Average faculty household size 3.23; for staff, 2.85. There were 1.39 children per faculty household, of whom 0.97 were enrolled in the Lawrence public schools, similarly, there were 0.89 children per average staff family, of whom 0.51 were enrolled in public schools.

54. The University and Local Economy: A Study of the Economic Interaction Between the University of Wisconsin and the Dane County Economy. William A. Strang. Wisconsin Economy Studies #4. Madison, Wisconsin: Bureau of Business Research Service, Graduate School of Business, University of Wisconsin, September 1971. 132 pages.

This study determines how the presence of the University of Wisconsin, Madison affected the Dane County economy during the year 1969-70. In Fall 1969-70, UW enrollment was 35,549 students; there were 5,224 faculty and 5,903 staff.

The American Council on Education, Estimating the Impact of a College or University on the Local Economy, was used as a preliminary guide to the study. Major dollar outflows from the university to local economy were classified as institutional expenditures, employee expenditures, student expenditures, and visitor expenditures. Findings are presented in two major sections: dollar flows to the local economy and dollar flows from the local economy.

Based on a sample of one percent of the 180,000 vouchers representing economic transactions during fiscal year 1969-70, the report found that there were nearly $16 million of local purchases under twenty-five dollars. This local share was 37 percent of the university's total operational budget of $45 million, exclusive of payroll, fringe benefits, fellowships and scholarships. Industry breakdowns for these purchases, including construction repairs, manufacturing, transportation, wholesalers, business services and food stores are provided in the report.

The report states that the university made payments to local governments, including water and sewer, of nearly $500,000, and an additional payment of approximately $300,000 (1970-71) to pay for the schooling costs of children of university students. In addition, the university paid rent of $1.3 million to non-governmental agencies.

In 1969-70, construction contracts totaling $14 million were made, of which local Dane County businesses received 41 percent of the dolar volume. Of the remaining 59 percent ($6.5 million) paid to non-local firms, 91 percent of the purchases flowed directly back into the local community.

To determine employee expenditures, a questionnaire survey was undertaken. Based upon 158 usable responses it was estimated that university non-student employees spend $64 million in local businesses, and spend an additional $5 million each in payments to local households and charitable organizations. This total expenditure of $74 million represented 86.3 percent of employee disposable income spent in Dane County. (Of the survey sample, 10.3 percent purchased homes during the 1970-71 fiscal year, at an average home purchase cost of $30,125.)

Student expenditures, based on the results of 206 student questionnaires, totaled $82 million plus an additional $37 million for university services, including $24 million in tuition, $10 million in residence hall charges, and $3 million in student activities, student health fees, and union memberships.

Visitors were divided into three major groups: football spectators, parent visitors, and other visitors. Approximately 527,000 visitor days were measured. Football visitors, with an average of 3.2 visitors per party, parent visitors, with an average of 4.68 visits per year, and other visitors, including conferences and training sessions on campus, resulted in expenditures of $13.5 million in the local economy and an additional $1.7 million to the university.

Of the estimated total direct flow of $179 million to local businesses, financial, insurance, and real estate were found to be the greatest beneficiaries of the presence of the university, receiving a total cash flow of $45 million. Other principal recipients included food stores ($25 million), automobile sales and service ($18 million), transportation, communication and utilities ($13 million) and eating and drinking places $12 million).

Based upon the ratio of sales to employees, the report estimates that 6,221 jobs were created in the local business community as a result of purchases by university students, faculty and staff.

To estimate an expenditure multiplier, the author chose to apply input-output multipliers developed in an earlier study of Door County, Wisconsin, which produced an income multiplier of 2.19. As a consequence, the $179 million in university-generated local business expenditures and $19 million in payments to local governments, households and charities resulted in an expenditure impact, both direct and indirect, of $451 million.

The report indicates the most basic issue related to the university and local government was whether or not the university "community" contributes its share to cover the costs of local government operations. The author indicates that the total taxes collected from this "community" was the most relevant basis for this evaluation.

The university community contribution to local government revenues was divided into three elements: property taxes paid, impact on commercial property taxes paid, and impact on tax aids from the state government. According to the author, in 1970, Madison's university community made property tax payments of $4 million (25 percent of the net property taxes collected in the city). In total, the university community living in Madison paid 38.1 percent of the non-commercial taxes in the city in 1970.

When commercial taxes were eliminated from the tax base, the university community contributed an average of $42 per resident, while the average of all city residents was $43 per capita; therefore, university community residents paid $68,000 less than their share of taxes for city government. Taxes for Madison's schools, exclusive of commercial taxes, totaled an average of $462 per school child. The university community residents paid an average of $944 for each of its children attending school, while non-university residents paid $351. On this basis, the university community contributed $3 million above its share of incurred costs.

In summarizing the "property tax question," the author notes "as far as property taxes alone are concerned, it appears that the university community pays more than its share of property taxes relative to the rest of the community." This well-documented report concludes that, "the findings indicate that Madison does not suffer significantly because of the tax-exempt status of the university."

Appendices to the report include the industry classifications used in the study; construction, faculty-employee and athletic fan questionnaires; and the complete input-output table for Door County, Wisconsin.

55. *The Economic Impact of Fort Hays Kansas State College on the City of Hays, Kansas.* Jack C. McCullick with the assistance of Harris B. Holler and B. J. Reed. Hays, Kansas: Department of Economics, Fort Hays Kansas State College, April 1972. 52 pages.

This report uses the American Council on Education publication, *Estimating the Impact of a College or University on the Local Economy*, as its methodology. The authors stress the "...study will not--indeed it can not--yield a single net benefit or cost figure." They indicate it is important to bear in mind that the models used in this study are designed to produce current, short range results. The time span considered in this study is fiscal year 1970-71.

During the study year, the number of faculty and staff totaled 530. Although the student enrollment at the time of the survey is not given, it was indicated that 2,093 students obtained local room and board from dormitories, fraternities, sororities, other groups, or parents; 2,602 students rented local housing; and 747 students were considered non-local. Thus, it is possible to assume that the average enrollment was at least 3,349 students.

College-related local business sales volume was estimated at $15.0 million resulting from three different types of impacts: direct impact, which included all college-related local expenditures and totaled $8.4 million; indirect impact, estimated at 20¢ for every dollar of sales, and amounted to $1.7 million; and induced impact, estimated at 60¢ for every dollar of direct impact, which amounted to $4.0 million.

Based on a 1970 City of Hays business volume of $70.3 million, the $15 million in college-related local business volume was slightly over 20 percent of the total.

The value of local business property committed to college-related businesses was estimated at $8.2 million, and the expansion of local bank credit base resulting from college-related deposits was $1.4 million.

The total revenues received by local government units attributable to the presence of the college was $407,000, while the total operating costs of government-provided services amounted to $1.25 million. (One of the problems in the extreme excess of costs of local government over revenues is the fact that only direct revenues are calculated and indirect revenues, such as property tax paid by students renting housing units, is not calculated.)

An employment multiplier of 1.45 was assumed for the study. Thus, in addition to the 530 faculty and staff positions, 768 jobs were indirectly created in the community. The income multiplier was estimated at 0.58. Thus, for each dollar of college-related expenditures, $0.58 of personal income ultimately would be generated via the spending and respending of household income in the community. This resulted in personal income of local individuals totaling $9.3 million.

Appendices to the report iterate the details of each of the ACE models.

56. *The Impact of the University of Pittsburgh on the Local Economy*. Prepared for the University-Urban Interface Program, University of Pittsburgh. Washington, D.C.: Educational Systems Research Group, April 1972. 81 pages.

This study is generally based upon the American Council on Education report, *Estimating the Impact of a College or University on the Local Economy*.

In 1970-71, the University of Pittsburgh had an enrollment of 16,800 full-time students, including 5,000 graduate students; 3,900 lived on-campus, 7,800 lived in their own off-campus housing units, and 5,100 lived at home and commuted to school. There were 1,700 faculty and 3,000 staff employees.

The primary goal of the study was to explain the direct cash flow impact of the University of Pittsburgh on the surrounding economy: the city, Allegheny County, the Commonwealth of Pennsylvania, and beyond state borders. The focus was on revenues and expenditures in the year 1970-71.

Of the $126 million in university revenues, 21 percent was a Commonwealth of Pennsylvania tuition supplement for resident students, 22 percent came from tuition and fees of students, 9 percent was maintenance appropriations from the Commonwealth of Pennsylvania, 26 percent was sponsored research training and consulting services, 9 percent was auxiliary enterprises, and the other 13 percent came from a variety of sources.

Of the expenditures by the institution, instruction accounted for 35 percent; other educational expenses, 20 percent; plant funds, 3 percent; sponsored research, training and consulting services, 22 percent; auxiliary enterprises, 9 percent; and other services, 10 percent.

Collectively, there was a total of $91 million in direct local impact from the university, its employees, students, and visitors, summaried as follows: annual construction, $15 million; university purchases, $20 million; other local payments, $10 million; local purchases by faculty and staff, $30 million; student local purchases, $13 million; and visitor expenditures, $3 million.

The report finds that Univerrity employees paid at least $4.3 million a year in state and local taxes, of which 45 percent went to the city, 33 percent to the county, and 33 percent to the Commonwealth. Pittsburgh graduates who were still alive were estimated to be worth $6 billion in human capital. This was based on the calculation of 72,000 alumni each having an average life-time earning advantage of about $81,000 over 40 years. At an interest rate of 6 percent, the present day value is $2.2 billion.

Regarding alumni, more than half of the law school graduates still lived in and around Pittsburgh, and 83 percent of the law school graduates resided in Pennsylvania. Fifty-eight percent of the medical graduates were within the Commonwealth of Pennsylvania, 37 percent of them in the city or in Allegheny County. Similarly, 58 percent of the business and engineering school graduates lived within the Commonwealth.

Regarding construction, it was estimated that 70 percent of the material costs were likely to be spent locally; 100 percent of the labor costs were considered as an addition to the Pittsburgh economy. Based upon the assumption that the cost of the building is one-half labor and one-half material, 85 percent of construction expenditures would stay in Pittsburgh.

The report provides a considerable analysis of the effects of tax exemption on local government. Collectively, it indicated that the City of Pittsburgh has a size of 28,954 acres, of which 66 percent were taxable and the balance tax exempt. Of the 9,848 tax exempt acres, the University of Pittsburgh owned 125 acres, or 1.3 percent of the city total. If the tax-exempt land was taxed at the same rate as the average of all taxable land in the city, prorating both land and building taxes on the basis of land areas, it would total approximately $300,000. In addition to the $300,000 computed as city "loss of revenue" for tax exemption, an additional $70,000 would be added for county tax exemption. If the land were valued strictly for single-family residential purposes, at a density of five units per acre, the resulting revenue for both the city and county would total $625,000 per year in taxes.

Under an alternative set of assumptions, the report calculates the results if the university campus were occupied by a profit-making organization on a scale similar to the university. If none of its property were owned by the state or the city, then the profit-making organization would have to pay between $3 million and $6 million in real estate taxes.

In 1970-71, the University of Pittsburgh paid the city $170,000 and the county $49,000 in real estate taxes on those properties judged to be taxable as revenue-producing activities. These properties included the book store and rental properties. Also, the university collected $53,000 in amusement taxes on behalf of the city and paid $75,999 in sales taxes to the Commonwealth of Pennsylvania. The university self-provided municipal-type security and other services totaled $3 million.

Based on shadow taxes computed on the acreage of the campus, from either a valuation of the campus or from existing official assessments, the economic expenditures by the institution to offset the exemptions indicate that the university paid its own way in terms of direct economic effects. The author's calculation of the "shadow tax" ranged in value from $285,000 to $5 million; the offset paid for by the university totaled $4.3 million.

In measuring the impact of university purchases, the report indicates that out of its 1970-71 operating expenditures of $123.7 million, the university spent six percent of this sum, or $74.2 million, on salaries, wages, and nonwage elements of compensation for faculty and staff. Of the remaining amount, $30.6 million was for purchases of equipment, supplies, telephone and communications, maintenance, and $18.4 million for financial charges, debt service, and net support or research costs for scholars and programs. (It was the author's opinion that of the $30 million available for purchases, approximately two thirds, or $20 million per year, was spent in the local area--primarily in the City of Pittsburgh.)

A chart on the distribtuion of April 1971 payment vouchers indicated that 24 percent of the vendors and 47 percent of the total purchase value was in the City of Pittsburgh, while 65 percent of the vendors and 45 percent of the purchase value were out of the state.

To estimate how Pittsburgh employees spend their income, a survey, with 973 usable replies, was completed. The sample appeared to be over-representative of the higher income employees, with 60 percent of the respondents indicating incomes over $10,000 per year while only 36 percent of the university employees earned this sum. One-third of the respondents lived in households with more than one income earner.

Collectively, more than 4,700 Pitt faculty and staff spent 75 percent of their $48 million of disposable income in Pittsburgh and in the county each year. Of the gross income, approximately $15 million went for taxes, savings, and charities; another $12 million was spent on the purchase of consumer goods and services. Of this amount, about 80 percent was for food, clothing, personal services, medical care, insurance, and other nondurables. An additional $5 million was spent for durable goods. In total, the gross expenditures of Pitt employees were assumed to be approximately $60 million, although it is not explicitly stated in the report.

The $30 million spent each year in local retail purchases of durable and nondurable goods by faculty and staff was approximately one percent of the $2.8 billion in total retail sales for Allegheny County in 1970.

Without much detail, the report indicates that in addition to the $6 million a year that resident students on the Pitt campus pay for room and board in dormitories, they and their fellow students spend $16 million a year while attending the university. It was indicated that all but 10 percent of this $16 million a year is spent within the state. This amount, approximately $1,000 a year per student, was divided into $200 for durable goods and $800 for nondurable goods. Of the nondurable good expenditures, about $200 is for travel and vacation.

Visitors were estimated to total 90,000 persons per year, spending about $3.1 million. The researchers estimate the accuracy of this figure at ± 25 percent, i.e., the total could be as low as $2.3 million or as high as $3.9 million. According to the report, based on an average expenditure of $18 per visitor, $1.2 million was spent for spectator expenditures in Pittsburgh.

It was also concluded that approximately 12,000 parents and relatives visited students during the year, with an average of 2 visitor days each. The estimated expenditures during this period was $58 per visitor per day, for a total of $1.35 million. Education visitors were estimated at 18,000, and business visitors at 7,100, for a grand total of 25,100. It was estimated that each of these visitors stayed an average of 2.5 days and that they spent an average of $25 per day, for a grand total of $625,000 per year.

The survey reports that it was difficult to determine the average of typical bank balances. The report indicates that faculty, staff members have an average of $350 in checking accounts and an average of $1,000 in savings accounts. The computed total of these accounts would equal $6.2 million; however, the researchers opinion was that the total is closer to $4 million. Resident students have an average of $160 in the bank, while nonresident students have an average of $390 in their checking accounts. Sixty-six percent of the off-campus students reported savings accounts with an average of $290. The researchers postulated that the total amount in student bank accounts was approximately $4 million.

Based on an estimate of $6 million in checking and savings deposits of faculty, staff, and students in Pittsburgh banks, and at reserve ratios of 17.5 percent on demand deposits and five percent on savings deposits, the $6 million would permit an expansion in the local credit base of $5.4 million. In addition, the university itself had an average demand deposit of $2 million which would add $1.7 million to the immediate credit base expansion.

57. *The Impact of the University of Pittsburgh on the Local Economy: A Methodological Appendix*. "A Supplement to a Report Prepared by the Educational Systems Research Group for the University-Urban Interface Program." Pittsburgh, Pennsylvania: University of Pittsburgh, Office of the Secretary, May 1972. (OUT-OF-PRINT)

This methodological appendix is a companion volume to Bibliography Item No. 56 above. The authors indicate the twin objectives of the economic impact study were to test the ACE methodology and to provide a service to other institutions that might wish to do similar studies in the future. The appendix contains a discussion of how the survey was carried out, its problems, what can be done in future studies to avoid problems, and a series of specific comments on the ACE models used.

The report includes three survey forms distributed as part of the survey with written comments to show needed improvements. It was indicated that of the approximately 12,000 surveys distributed, a total of 1,990 were returned (1,027 from students and 973 from faculty and staff). This was equivalent to 17 percent of the total distribution.

Regarding the ACE models, the authors indicate that ideally one would develop files on each aspect of the analysis, identify data elements, and document them through research. They also indicate that substantial pieces of data were in the files of single officials of the university or the community, and it was necessary to tap these files in a comprehensive way.

Moreover, they indicate that the ACE "models do not lend themselves to writing up interesting reports that contain some of the unique features of the institution being studied. Rather, they are guides primarily to ensure that something important is not left out of the analysis."

Based upon implementation of the models and related work, the following suggestions and comments were made regarding the ACE procedures: (1) the scope is limited to the impact of operating budgets. The capital side, including human capital, should be added; (2) institutional revenues as well as expenditures should be studied. For example, none of the funds for the University of Pittsburgh came from either the city or the county except in the form of tax exemptions; (3) interstate implications of costs and benefits need more attention; (4) options were open on the definition of "local business volume" as the ACE model was not specific in its recommended definitions of local business. It was suggested that the primary qualifications of an indicator are that it be simple and understandable, to minimize interpretative confusion.

It was also suggested that: ( ) improvement was needed in the evaluation of tax exemption models. In the Pitt study, three different approaches were used and three vastly different results were reached; (2) competing businesses operated by the institution demand more technical analysis than is provided in the models; (3) models dealing with the value of business property and inventories could be deleted; (4) the community cost of educating college-related children needed further analysis and theory to guide impact research; (5) more elaborate multipliers were needed on banks and the banking system; (6) owned housing as well as rented housing needed to be considered in a person's expenditures; (7) more attention was needed on the question of expenditures of visitors to the institution; and, (8) the ultimate challenge was to measure the cultural impact of a university or college.

Included in the methodological appendix was a series of selected forms and survey administrative aids, including diary pages, lists of names of project files used in the survey and their content, and a description of each of the ACE models and values achieved in the study.

Finally, the report indicates some reasons why such a study should be conducted, the implementation experience in conducting the study, the project's procedures, and the role of a consultant. The appendix concludes with an inventory of possible topics for future economic impact studies.

58. The Economic Impact of Kansas State College on the City of Pittsburg: Summary Report. Richard K. Hay, Associate Professor of Economics. Pittsburg, Kansas: Kansas State College of Pittsburg, November 1, 1972. 22 pages.

The purpose of this study was to present estimates of the several quantifiable economic impacts of Kansas State College of Pittsburg on the City of Pittsburg, Kansas for the year 1972-73. On-campus enrollment totaled 5,208, and projected summer 1973 enrollment was 3,038. College employment was 511 faculty and staff positions of half or more time, with an additional 48 persons employed in food services. The report uses the American Council on Education publication, Estimating the Impact of a College or University on the Local Economy for its methodology.

KSC students were estimated to spend $6.6 million for nondurable goods and services during the 1972-73 year and faculty and staff members $3.0 million. Durable goods for students and for the faculty, such as automobiles, new construction, or purchases of existing residences or land, represented an additional expenditure of $0.6 million. (Faculty and staff who reside locally spent approximately fifty-six percent of each dollar of take-home pay in the City of Pittsburg.)

Expenditures by KSC fraternities and sororities amounted to $136,000. The college itself spent $475,000 for goods and services with an additional $105,000 in student activity funds, giving a total of expenditures by the college to local businesses of $0.6 million during the current year. Food service and bookstore expenditures totaled an additional $0.2 million.

The total direct impact on local businesses by students, faculty, college, and college business organizations was estimated at $11.1 million. In addition, the author suggests that $80,000 to $125,000 in direct spending might be generated by the visitors.

To estimate the indirect impact, the author estimated that 25 percent of each dollar received by local businesses was respent for goods and services provided by other local businesses. This resulted in an indirect impact on the local community of about $2.8 million. Moreover, an induced impact, which is the creation of further spending and respending, might equal 80 percent of the amount of indirect spending. This induced impact amounted to approximately $8.9 million.

The assessed valuation of local real estate owned by faculty and staff was approximately $1.3 million and $0.3 million for students. Personal property owned by faculty, staff, and students yielded a total assessed valuation of $1.8 million. Based on a 1973 ad valorem tax levy for the City of Pittsburg of 41.970 mills, the college community paid $146,900 in real estate taxes.

Of the city population of 21,874 (including an estimated 1,500 locally residing students who are not counted as part of the official population of the city), approximately 5,710 were determined to be students, spouses, and children, and faculty and staff and their families. On this basis, the college represented approximately 26 percent of the total population of the city. By comparison, college households accounted for approximately 22 percent of the personal and real estate taxes paid by individuals in Pittsburg.

The authors conclude "that the college pays essentially a proportional share of the general ad valorem property tax to support municipal government in Pittsburg." The above figures do not include the indirect tax payments of students or faculty or staff who rent their housing. The authors indicate "...studies in other communities suggest that 20% to 33% of all house rental payments represent property tax shifted to the renter." They state that these disguised tax payments are not included in the estimated property tax revenues paid by the college community.

The impact on the unified school district was based upon measurements for the cost of educating approximately 598 children of college students, faculty and staff out of the unified school district enrollment of 3,389. Using property tax levies, the college community was responsible for approximately 17 percent of the enrollment, but paid about 21 percent of the personal and real estate taxes in the school district. The authors indicate, "...once again, the real estate taxes shifted to renters by local landlords are not included in the college totals and, if they could be estimated, further add to the colleges financial contributions to the school district."

The report estimates that each dollar of direct spending by the college, faculty, staff, students, organizations, and college businesses creates an average of 0.0009 jobs in the local community. Direct spending by these groups of approximately $11.2 million would mean that approximately 1,008 jobs were created in private local businesses due to college expenditures. This gives a total of 1,519 jobs (including the 511 employed by the college) as a result of college expenditures.

Of particular interest in this study is the estimated impact of an anticipated KSC enrollment decline in fall 1972 and resultant reduction of faculty and staff. The head count enrollment at the college for fall 1972 was 488 less than the head count enrollment for fall 1971. The author estimates that the direct spending of these 488 students would have amounted to $659,000. Using the same coefficient of indirect induced impacts, this meant that an additional loss of $165,000 would result, and the induced impact loss would total $528,000 for projected total loss impact to the community of $1.4 million.

In addition to the enrollment decline, it was anticipated that there would be a reduction in faculty and staff positions at the college the following year. Assuming a loss of 17 faculty and four staff members, it was estimated that the direct spending loss would total $138,000, the indirect spending loss would total $35,000, and the induced spending loss of $110,000 for a total local spending loss of $283,000.

59. The Economic Impact of Kansas State College on the City of Pittsburgh: Statistics, Methodology and Models. Richard K. Hay, Professor of Economics Pittsburg, Kansas: Kansas State College of Pittsburg, June 30, 1973. 115 pages.

This report presents the methodology of the study entitled, The Impact of Kansas State College of Pittsburg on the City of Pittsburg: Summary Report (November 1, 1972), see Bibliography Item No. 58 above. Estimates and computational figures are summarized verbally, rather than as algebraic relationships.

The report states the purpose of economic impact studies is to define and measure the economic interrelationships between a given type of activity and the rest of the economy or sub-economy of which it is a part. While complex models often provide a more complete understanding of an economic process than do crude statistical models, this report argues that there are costs as well as benefits from the increased complexity of analysis. This complexity, in itself, is not always a virtue. The author concludes that while the American Council on Education (ACE) economic impact model is a good point of departure, certain modifications have to be made to increase the validity of the impact estimates and thus increase the credibility of the study.

In the KSC study it was decided that too little was known about consumption patterns of students and faculty to accept the ACE assumptions or to use previous expenditure levels for student estimates.

The Kansas State College impact model was developed to measure (1) the direct impact of faculty, staff and student expenditures for nondurable goods and services, home furnishings and automobiles; (2) the direct impact of operational expenditures by the college; (3) the indirect impact of the above expenditures on local businesses; (4) the amount of personal and real property taxes paid by faculty, staff, students, fraternities and sororities; (5) the amount of personal and real property taxes paid by the groups listed above; (6) the number of faculty, staff and student families who regularly demand basic governmental services from the city; (7) the number of children of faculty, staff and students who attend the unified school district; and, (8) the number of jobs in the local business firms which result from the indirect impact of local expenditures by faculty, staff, students and the institution.

To conduct the study, all faculty and staff members were sent questionnaires, while students were sampled with a separate relative sample size established for each of 36 separate student classifications. Approximately 51 percent of married students, 52 percent of single students, 87 percent of faculty and 79 percent of staff who received questionnaires returned them in useable form.

The report includes a section on estimating the local spending multiplier. The report describes the fraction of the extra dollars in income a local resident respends locally as the marginal propensity to spend. To ascertain the true value of the marginal propensity for non-college households and business firms would have required an extensive sampling process; such a survey was not undertaken.

Based on the findings in the American Council on Education report of "first round" spending by college faculty, staff and students, 20 percent to 30 percent would be respent in the City of Pittsburg. Second through final round of the spending-respending process would generate additional income to local households and businesses in an amount equal to 75 percent to 90 percent of the original first round spending. The authors claim this would result in a multiplier of 1.00 + 0.25 + 0.80 = 2.05.

To estimate the net impact of the college on local government and public schools, a simple limited approach was taken. Specifically, two ratios were computed: first, the ratio of locally residing faculty, staff and students to the city population; and, second, the ratio of the valuation of real estate and personal property owned by all other individuals in the city. The first value ratio was 0.237, and the second value ratio was 0.261. The authors do not comment on the significance of the two ratios, although they point out that tax payments shifted to renters were not estimated and are not part of the ratio calculations.

A similar approach was taken in estimating the next impact on the unified school district. The ratio of faculty, staff and student children attending the school district to all children attending the district was 0.223; this compares with the ratio 0.172 for the valuation of real estate and personal property owned by the faculty, staff and students living in the school district in comparison to the value of all individually owned real estate and personal property located in the school district.

Appendices include estimates of local expenditures, standard errors of the estimates, estimates of assessed property valuation, and faculty, staff and student questionnaires.

Also included is an income demand schedule (or consumption function) for locally purchased goods and services. Each estimate was based primarily upon data obtained through the questionnaires and was developed using a linear regression of faculty and staff consumption expenditures on disposable income. The computed marginal propensity to consume (MPC) and the income elasticity (IE) for locally residing faculty and staff were as follows: faculty MPC (0.22), faculty IE (0.45); staff MPC (0.33), staff IE (0.61). The elasticity estimates suggest that, on average, an across-the-board pay increase of 5 percent to staff members would cause their consumption of locally purchased goods and services to increase by more than 3 percent; a similar increase for college faculty would cause their local consumption to increase by about 2 percent.

A short bibliography is included.

60. Economic Impact of the University of Virginia on the Community. Charlottsville, Virginia: Tayloe Murphy Institute, Graduate School of Business Administration, University of Virginia, May 1973. 67 pages.

The study reviews the economic impact of the University of Virginia on the Charlottesville-Albemarle County area. It is based on the methodology of the American Council on Education's report, Estimating the Impact of a College or University on the Local Economy. The report describes the impact of the University in 1972 and provides a forecast of the impact in 1980. In 1971-72 enrollment was 12,907. By 1980 it was recommended that enrollment be limited to 16,054--an overall growth of 24 percent.

According to the report, the university made local purchases totaling $6.5 million in addition to a $50.5 million payroll for faculty and staff. Students made local purchases of $19.1 million (including receipt of $2.5 million in wages from the university) and visitors made local purchases of $1.6 million. Businesses reported, "...they believed that on the average 18% of their total business was with the university."

The authors indicate that if the total retail, wholesale, and service volume for the area (estimated to be over $270 million in 1972) was used, the university's share was 23 percent. Local spending was estimated to be $36 million of the $50.5 million dollars of university wages to faculty and staff. This included an average annual expenditure for food of $1,815 per household, $2,811 for housing, and other expenditures of $3,405. The average student spent $1,718 locally, over and above tuition and other payments direct to the university. This consisted of $658 for housing, $570 for food, and $490 for other purchases.

Of the more than $280 million in business real property in the area, approximately $92.6 million, or 33 percent, was attributed to meeting university-related needs. Likewise, local business had over $10 million in inventory and $40 million in other taxable assets to support the university-related businesses.

Based upon university bank deposits, as well as checking, savings, and savings and loan accounts of faculty, staff, and students, area banks were able to expand their credit base by over $32 million. Of the 57 percent of the students who had local checking accounts, the typical balance was $320. Of the 20 percent with local savings accounts, $960 was the typical balance. The typical local bank account was $920 for the 86 percent of the faculty who had checking accounts, $2,910 for the 53 percent who had local savings accounts, and $4,280 for the 21 percent who had savings and loan accounts.

Government revenues from the university-related community, including real estate taxes, personal property taxes, local sales taxes, state aids, and other sources of income, totaled $6.4 million; cost of services, including public schools and other local government services, totaled $6.7 million.

The university, the largest employer in the area, employed the equivalent of 5,989 full-time faculty and staff (plus 1,933 students on a part-time basis), and accounted for nearly 16 percent of the area's total employment of 37,000. Through the multiplier effect of university-related expenses, employment would increase to 11,583, or 31 percent of the workers in the area.

If the 1971-72 expenditure levels held in the future, the increased student body would contribute $23.8 million to the area economy. Similarly, university wage payments to faculty and staff would increase from $50.5 million to $58.6 million and payments to student employees would increase from $2.5 million to $3.1 million.

The first appendix to the report provides descriptions of the development of the models and sub-models used in the survey, as adapted from the ACE publication.

The second appendix provides development of the multiplier concept. For expenditures, the marginal propensity to spend locally was estimated at 0.68, while leakage of spending outside the area (the final outflow of each sales dollar) was estimated to be 0.62. Substituting these figures into a multiplier form, an expenditure multiplier of 1.348 was developed. An employment multiplier of 1.5 was also selected. Based upon the employment multiplier, the direct faculty staff employment of 6,655 provided an additional 2,998 jobs for a total employment of 9,653, excluding student employment and multipliers of student employment. When these are included, the total direct and indirect employment totals 11,948. The authors indicate the results were in line with the figure produced using the ACE approach which suggested each dollar of local expenditures would result in 0.0008 jobs.

The third appendix to the report describes survey methods and findings. A copy of the questionnaire returned by 59 percent of the approximately 1,200 persons who received it was included. Of interest was the finding that for each married student household there was an average of 2.6 persons, of whom 0.5 were children, with an average of 0.1 children per household in public schools. Employment figures indicate that of the spouses of married students, 52 percent were employed by the University, 25 percent were employed elsewhere, and 23 percent were not employed.

For the faculty/staff who received a questionnaire, 713 (31 percent of 2,300 mailed questionnaires) were usable. Of the faculty/staff households, the average size was 3.0, with an average number of children 1.4 and an average number of children in public schools of 1.3.

Of the 525 business firms who were mailed questionnaires, 154 usable questionnaires were received (response rate of 29 percent). Of the businesses responding to the survey, all were asked "Did the University influence you to locate your business in the Charlottesville-Albermarle area?" Twenty-five percent indicated that it was a major factor, 28 percent a minor factor, and 47 percent indicated no influence.

Finally, a survey of fraternities, responded to by 15 out of the 35, is included.

61. The Economic Impact of the University of Denver on the State of Colorado, Graham C. Taylor and John P. Bryden. Denver, Colorado: Industrial Economic Division, Denver Research Institute, University of Denver. September 1973. 33 pages.

The study addresses the pragmatic question: what did Denver University's presence in Colorado contribute to the state's economy during 1972-73? The study was based on The American Council on Education publication, Estimating the Impact of a College or University on the Local Economy, with the author's note that the ACE devised methodology applies to comparatively small communities and pays relatively little attention to the treatment of family income. (Enrollment totaled 6,919 full-time and 957 part-time students.)

The direct impact of the university totaled $42.3 million in 1972-73; this included expenditures of full-time students and their families (excluding transactions with the institution of $21.3 million), expenditures of staff of $13.0 million, expenditures of out-of-state visitors of $1.7 million, institutional purchasing of $5.4 million, institutional construction (5-year average) of $10.8 million, and other transactions in-state and local taxes of $1.0 million. The distribution of these expenditures included $5.0 million for rents, $2.5 million in mortgage and life insurance payments, $33.4 million in payments to business (excluding sales taxes), and $2.3 million in taxes paid to state and local governments.

The report claims that about 70 percent of the university's income was spent on salaries and fringe benefits for faculty, staff, and student assistance; the remaining 30 percent was spent on other transactions including $0.9 million in interest and principal repayments for loans on dormitories and $0.2 million for student health premiums, all of which go out of state. Sixty percent of the University's total income was tuition and fees with 85 percent of all the University's income from sources outside Colorado.)

Omitting transactions under $10, more than 1,500 organizations received payments from the university during a three-month survey period, only two companies--the telephone company and the public utilities company--received more than $50,000. Analysis of the $7.3 million of general disbursements by the University indicated that 73 percent was spent inside the Denver metropolitan area, an additional one percent inside the State of Colorado.

Although it was assumed that the staff impact, for study purposes, was restricted to their income from the institution, the questionnaire survey showed that for every $1.00 of disposable income received from the institution, the average family or individual received approximately $0.52 from other sources, principally spouses' earnings.

The authors suggest that the income multiplier was likely to be within the range of 1.6 to 2.2, with a realistic figure around 1.9, the figure used in the study. Using the range of values from 1.6 to 2.2, the university's total economic impact on Colorado would vary between $64.3 million and $96.7 million.

Indirect employment was based upon the American Council of Education's study which suggested a range of between 0.70 and 0.90 man-years of employment per $1 million change in direct demand. Although the calculation was not explicitly stated, the report shows that once the value of government services is subtracted from direct expenditures, an indirect full-time employment of approximately 4,200 persons was created. Another approach, based on direct income, yielded approximately 3,900 workers. The authors indicate that these figures agree remarkably well with the alternative approach of employment based upon direct demand.

One section of the report describes the university's impact on state and local governments. The total direct impact on governments was considered to be $2.3 million, composed of the following increments: state income tax and Denver head tax, $0.4 million; real estate tax $0.9 million, and sales tax on staff and student and state expenditures, $1.0 million. Although the total general sales tax in Denver is six percent, there were a number of retail transactions, including most services, which were not subject to tax. Thus, an average total tax rate of 3.5 percent was used.

The authors state that another important impact, although not a completely direct effect, was the property tax levied on apartments occupied by the members of the DU community, estimated at approximately 14 percent of gross rents. This amount of $0.7 million was not included in the above direct tax computations.

The report claims that if "state and local government expenditures in Colorado, other than on schooling, were $390 per capita, the cost of providing municipal-type services to the DU community would be $2.9 million." In addition, if schooling costs were $1,260 per child, the cost of providing education (to the 1,800 university-related school children) would be $2.3 million.

The first appendix to the report provides a simple description of the methodology used. Questionnaire responses were based upon 141 responses to questionnaires mailed to 382 staff and faculty. Questionnaires were returned by 908 students, representing 11 percent of the registered student population. A separate appendix includes questionnaires used for faculty and staff as well as students. (Although reference is made to the American Council of Education's study manual, there are no explicit descriptions of development of the model or submodels taken from the ACE survey for the DU study.)

Also, College Management, Volume 9, Number 3, March 1974 (pp. 26-27) contains a brief article on the University of Denver study.

62. The Economic Impact of the State University of New York, College of Arts and Science, Geneseo on the Village of Geneseo, 1971-72. Bowman N. Hall, II. Geneseo, New York: Department of Economics, State University of New York College of Geneseo, 1973. 88 pages.

This report provides estimates of the economic impact of the State University of New York (SUNY), College of Geneseo on the Village of Geneseo for the year 1971-72. It follows the American Council on Education publication, Estimating the Impact of a College or University on the Local Economy. In 1971-72, SUNY-Geneseo enrollment averaged 4,491; there were 393 faculty and 448 staff and administrators.

The report claims that it is different from earlier studies in that it takes into account a wider variety of factors and effects. It includes estimates of negative factors, and it states all estimates and assumptions in explicit terms. The author also indicates that the ACE models are simply linear cash flow formulas, including only what could readily be counted or added and omitting qualitative issues. He indicates the models suggest nothing about the college's effect on the quality of life in the village; they do not consider tempo of economic activity, the economic calendar, or economic stability, nor do they consider what the community would be like without the college.

Direct expenditures in the Village of Geneseo generated by the college were estimated at $5.3 million: the college itself was responsible for $1.0 million, visitors $0.2 million, students $1.5 million, and faculty and staff $2.6 million.

When indirect or secondary (multiplier) effects resulting from the direct expenditures are taken into account, the $5.3 million was expanded to become $9.3 million, or 64 percent of the total estimated retail sales of $14.6 million in the village in 1971.

Village businesses were estimated to commit $5.7 million in real property and $1.1 million in inventory and support of college-related businesses. Time deposits and demand deposits of college-related individuals in village banking institutions potentially expanded the market for loanable funds by $2.4 million.

College-related real estate taxes yielded a total of $225,000, including $1,000 paid by a student fraternity, $145,000 paid by local businesses which could be allocated to their college-related receipts, and $79,000 paid by faculty and staff on their homes. College-related state aid was approximately $119,000 to the village and school districts. An additional $28,000 was generated in college-related sales tax income. The cost to the village government and school district totaled $224,000 and $292,000 respectively.

The value of municipal-type service self-provided by the college totaled $714,000, including $544,000 in operating costs for the Holcomb campus school. The author indicates, "The community had not had to support an elementary school because Holcomb is part of the college and is financed almost wholly by State monies."

The report calculates that, because of the indirect-multiplier effects, the college is also responsible for creating 685 jobs in the community in addition to its own 841 faculty and staff employees.

63. *The Impact of the College on the Local Economy*. Research Report No. 11. Harrisburg, Pennsylvania: Harrisburgh Area Community College (3300 Cameron Street Road), 1973. 105 pages.

This study is based upon the American Council on Education (ACE) report, *Estimating the Impact of a College or University on the Local Economy*. The authors suggest that from the experience gained in conducting their study, the ACE economic impact report be used more as a guide than a procedural manual.

The major portion of the study deals with the impact of college-related expenditures on the local economy; other sections deal with the college's sources of revenue, taxes, and savings. The study area for the report is the tricounty area of Cumberland, Dauphin and Perry Counties of Pennsylvania. Results of the survey are based upon fiscal data for the college year 1970-71 and estimated from survey data for faculty and staff and students for the year 1971-72.

In contrast to the impact concept used in the ACE study, termed "inclusive impact" in the sense that it includes both those who would and would not be in the local area if the college were not in operation, the HACC authors decided a "conservative impact" statement, one which took into account only those individuals who would be in the local area if the college were not in operation, was necessary. Sixty-nine percent of the surveyed faculty stated they would not be in the area if the Harrisburg Area Community College (HACC) did not exist.

To provide study data, 353 responses were received out of a sample of 505 questionnaires--a 70 percent response rate. The 266 responses from full-time students was approximately 11 percent of the enrollment of 2,422 and the 87 responses by part-time students was approximately six percent of the enrollment of 1,498. Sampling procedures were not used with faculty and staff; the entire faculty and full-time staff population were surveyed.

Also, in contrast with the ACE recommended value of 1.9, the income expenditure multiplier used in the HACC study had a value of 1.45. A separate tax impact multiplier of 1.35 was used.

The net estimated annual income expenditure impact, including the results of multipliers, amounted to $4.6 million for the "inclusive" impact, and $1.9 million, "conservative" impact. In addition, the value of local business inventory committed to college-related businesses was estimated at $250,000, and the expansion of the local bank's credit base resulting from college-related deposits totaled $436,000. (The authors chose to omit the impact of the college expansion of major facilities since 1964.)

The college-related local expenditures included local rental expenditure for housing, local non-housing expenditures, and local expenditures by non-local persons associated with the college. During the 1970-71 fiscal year, the college spent $1.6 million for supplies and equipment of which 29 percent of the total expenditures went to vendors in the tricounty area.

The local faculty and staff rental housing expenditures varied between a conservative estimate of $111,000 per year to an inclusive estimate of $417,000. Likewise, non-housing expenditures varied from $482,000 to $912,000. The expenses of HACC students who lived at home were estimated at between $360,000 and $1.0 million annually. Stated generally, HACC students spent between $300,000 to $474,000 on local rental housing annually. These local nonhousing expenditures of students who rented local housing varied from $405,000 to $807,000 annually.

The inclusive and conservative estimates of total taxes paid annually by students, faculty and staff varied from between $94,000 to $120,000. The total number of school children of students, faculty and staff varied between a conservative estimate of 238 and an inclusive estimate of 618. This resulted in operating costs of the public schools estimated at between $219,000 and $569,000 of which between $117,000 and $303,000 was met by state and federal aid to the public schools.

This study revealed that less than 30 percent of the college's operating budget came from local taxes while almost 50 percent was from non-local sources.

Appendices to the report include an extensive discussion of the multiplier effect and the derivation of the multipliers used in the reports; analysis of the source and amounts of college revenues; a listing of the items from the ACE model not included in the HACC study and the reasons for the omission of each of the 15 items; population data; a discussion of economic impact studies and computer simulation, including considerations leading the authors to omit any calculations of standard errors; a summary of funds and major capital expenditures; and a copy of the questionnaire distributed to students, faculty and staff. An extensive reference section, concerned primarily with economic theory, is also included.

64. The Impact of the University of Wisconsin - Green Bay on the Economy of Green Bay and Brown County, Wisconsin (1971-72). James M. Murray. Green Bay, Wisconsin: The University of Wisconsin, no date (estimated 1973). 55 pages.

This study is based partially on the American Council on Education publication Estimating the Impact of a College or University on the Local Economy. Average enrollment during 1971-72 was 2,706 during the regular term, and 514 during the summer sessions. There were 200 faculty and administrators, and 230 staff personnel. Information on student income and expenditures was obtained from a questionnaire administered to 206 students; sixty-five percent of the faculty and staff also responded to a questionnaire.

The mean income of surveyed students was approximately $3,500 per year and median income was about $2,400. About 70 percent of the students had their college residence in the city of Green Bay, while 75 percent of the student spending occurred in Green Bay.

The survey indicated that about 26 percent of student spending was for housing, 28 percent for food and beverages, and 14 percent for transportation. Because of the difference in the spending patterns of married versus single students, and high versus low income groups, the students were divided into two basic groups: married students (average income $7,683), and single students (average income $2,110). Exclusive of taxes and expenditures for tuition and books, the total student consumption expenditures amounted to $4.9 million of which $3.7 million was in Green Bay.

According to the University's Office of Financial Aid and Student Employment, 60 percent of the students were employed part-time during the academic year--about one-half of these by the university. The average earnings of all students was $634 for the academic year. In addition, students earned an average of about $799 per capita during the summer months.

For faculty and staff, 51 percent of the staff and five percent of the faculty had university income of less than $10,000, while 11 percent of the staff and 10 percent of the faculty had income above $20,000. Consumption expenditures of the faculty and staff totaled $1.4 million of which it was estimated that 44 percent was spent on consumption goods. (Automobiles were purchased by 287 faculty and staff persons during the course of the survey year.)

Out of a total operating budget of over $8.5 million, the university spent $6.5 million on salaries, $1.3 million on supplies, and $0.7 million on capital equipment. Of the latter $2.0 million, approximately one-half was spent within Brown County on purchases of goods and services from local vendors. Based on the Department of Commerce's Standard Industrial Classification Manual, retail services, transportation, communications and utility services received the largest share of the university's expenditures.

Based on results of a study of visitors, the report indicates that the principal purposes of visits to the campus were to deliver speeches (8 percent), to sell professional materials (10 percent), to seek employment (14 percent), to inquire about the academic plan (28 percent), or for other purposes (40 percent). Based on an average visitor expenditure of $18 per day exclusive of lodging, and $14 per day for lodging, it was estimated that visitor spending totaled at least $122,000.

Although individual amounts are not given, the total collective average balance of university, students, and employees was approximately $3.1 million in all credit institutions. Approximately 68 percent of student deposits and 90 percent of faculty and staff deposits were in financial institutions in Brown County. Approximately 33 percent of the students borrowed funds at an average amount of $319 in 1970-71.

The report indicates that the estimated cost of educating 318 children of university families enrolled in public schools in the city of Green Bay totaled $270,000; the university community contribution towards the education of these students amounted to approximately $51,000 more than it cost the community to service the university population. Although the costs of other government services are not documented, the local government revenues attributable to the university population were calculated at $801,000. The authors conclude that the "analysis suggests that the University does not create an unusual burden for other local taxpayers because of its tax free status."

Collectively, the total direct expenditures of the university, both for operating and capital cost, student, faculty and staff expenditures, and visitor expenditures, total $12.5 million in Green Bay and $1.2 million elsewhere in Brown County. Based on a multiplier of 2.0 for the city of Green Bay, and 1.3 for Brown County, the total direct and indirect expenditures of the university were $26.6 million.

The report calculates the state taxes used to support the university at 0.0031 of the total state budget.

Based on total retail sales in Brown County of $323 million, and a retail trade employment of 10.087 persons, the report calculates that there were $32,000 in sales for every employee. When this ratio is applied to the total expenditures attributable to the university community, the report concludes that approximately 829 persons were employed by business firms because of sales generated by the presence of the university.

The appendix to the report comments on the survey sample and confidence intervals.

65. The University and Its Economic Environment: A Study of the Economic Impact of the University of Wisconsin-Milwaukee upon the Greater Milwaukee Area. Hans R. Isakson. Milwaukee, Wisconsin: The University of Wisconsin, 1973. 49 pages plus Appendix.

The study follows the American Council on Education report, Estimating the Impact of a College or University on the Local Economy. In estimating the initital or first round impact of the university, the measurement criteria included only those expenditures that were made in the Greater Milwaukee Area (GMA) because of the presence of the university.

The time period of this study is the fiscal year 1972-73. Summer enrollment totaled 10,375, while average full-semester enrollment was 22,879. Faculty and staff numbered 2,792. Only full-time students are included in the report findings; in eliminating part-time students, the author indicates that it was assumed that part-time students do not contribute to first-round economic impact. Student results are based on questionnaires from 249 students out of a survey sample size of 600. Faculty and staff results are based on a sample of 500.

The study indicates that the largest impact of the university community is upon retail stores in the GMA including gas stations, automotive stores (including automobile dealerships), apparel stores, drug stores, and food stores. According to the survey, relative to their total retail purchases, students spend almost twice as much at gas stations as the norm for the GMA, while faculty and staff are near the norm. Students spend more on automobiles as a group, but spend less per automobile than do faculty and staff. According to the survey, 5,560 students purchased automobiles at an average cost of $1,482, while 717 faculty and staff did so at an average cost of $3,123.

It was indicated that over one-half of all institutional expenditures in fiscal year 1972-73 were for construction purposes. For every dollar spent on construction, the university spent an additional $0.24 for building and grounds maintenance.

Of the university's purchases, 93 percent were in the city of Milwaukee. About 85 percent of student spending was in the city, while 80 percent of faculty and staff purchases was in Milwaukee.

The report estimates that a total of about $1.2 million was paid by the university community to local government in the form of direct property taxes. A calculation of indirect property taxes was made based on the factor of 0.3566 as the ratio of property tax payments to total housing payments for home owners and was applied to rent payments of nonproperty owners. This resulted in an additional $4.3 million in indirect property taxes.

Total first-round impact of student, faculty and staff, visitor and institutuional expenditures was $76.7 million. Based on a muliplier of 2.2 (estimated from a study of the Los Angeles area) the total final impact of the institution was $168.8 million.

The report indicates that each student at the university was responsible for just under $5,000 of total multiplied expenditures; similarly, the faculty and staff persons had an average impact of almost $11,000.

Based on the calculation that the Greater Milwaukee Area taxpayers provided approximately $4 million in state taxes used in the appropriations given to the University of Wisconsin-Milwaukee, almost $170 million in economic activity was returned to the area.

Tables in the report provide considerable background data on expenditures, in total gross amounts, by students, faculty and staff. Of the faculty and staff, 60.4 percent owned their housing, 37.6 percent rented, and two percent lived with their parents. The average number of persons in each faculty staff household was 3.09, and the average number of children under 18 years of age was 1.09. The average number of children in public schools was 0.62 and in private schools was 0.18.

Visitor expenditures were estimated at $15 per player per night for athletic teams; $38 per visitor day for recruiters and interviewers; $30 per visitor day for salesmen, academic visitors and job candidates; $32 per day for persons using convention facilities; and $22 per day for parent and student related visitors.

Appendices to the report include the questionnaire distributed to students, faculty and staff, and the visitor expenditure questionnaire.

66. Better University-Community Relations: An Impact Study of the University of Colorado on the City of Boulder. Boulder, Colorado: Vice President for University Relations, University of Colorado, February 1974. 147 pages.

The basic model for this study, covering the year 1972-73, was the American Council on Education publication, Estimating the Impact of a College or University on the Local Economy. Fall 1973 enrollment at the University of Colorado totaled 21,122 students; there were 900 full-time faculty and 2,500 administrative, professional, and service staff employees.

The total expenditures by the university community totaled $102.1 million. This included $16.5 million in university expenditures, $13.8 million staff expenditures, $46.2 million student expenditures, $10.6 million visitor expenditures, and $15.0 million faculty expenditures. Of this total, nearly $48.7 million was estimated to be retail purchases, amounting to approximately 16.7 percent of the City of Boulder's total retail sales. Total dollar volume varied from 30.0 percent of all expenditures for rent or house payments, to 21.4 percent for food and beverages, to 9.7 percent for automobiles, and 5.9 percent for entertainment.

Based upon a 1967 study by William Miernyk, which estimated Boulder's multiplier effect to have a value of 1.375, the report states that the total effect of university faculty, staff, student and visitor expenditures was $141 million.

Visitor expenditures were separated into two groups: visitors drawn to the City of Boulder by the university, and visitors drawn to Boulder by university faculty, staff, and students. Of the institutional visitors drawn to conferences and institutes, the report calculated that the average stay was 6.1 days with an average expenditure of $7.60 per day for those staying in dormitories, and $30.00 per day for those staying in hotels and motels. Out-of-area visitors to athletic events, with a one-day average stay, spent $30.00 per day. Visitors to faculty, staff, and students reported an average per day expenditure from $6.23 to $14.69.

Faculty, staff, student, and university demand deposits of $5.5 million, university repurchase agreements of $6 million and time deposits of $14.2 million, combined with cash balances of local businesses, resulted in expansion of the Boulder bank's credit [illegible] million annually.

In a survey of business firms to determine the extent to which the presence of the university influenced the location of businesses of Boulder, four percent indicated that the university was a prime consideration, 10 percent said it was a major consideration, 39 percent indicated it was one of several considerations, and 47 percent claimed it was not a consideration at all.

The university community was credited with generating $1.2 million in Boulder sales tax revenues annually, equivalent to 27 percent of the total sales taxes collected by the city in 1972. This includes $140,000 in city sales taxes paid directly to the city for university auxiliary enterprises such as the book store and food services. In addition, the university paid $200,000 to the city for water and $122,000 for sewer service. An estimated $16,500 in parking ticket fines and $18,300 for bicycle registration on the campus was also remitted to the city.

Prior to April 1966, the City of Boulder refunded all sales tax paid by the university on construction and remodeling work completed on the campus. Since that date, however, the university has paid two percent sales tax on every construction dollar spent for construction materials in the City of Boulder. The report indicates that during the past five years this amounted to an average of $102,000 per year. (A three percent sales tax paid to the State of Colorado on construction is refunded to the university each year.

The report calculates that because of the University's tax exempt status, the university is relieved of paying $329,000 in city sales taxes and $2.4 million in city property taxes. The sales tax figure was derived by multiplying the city sales tax rate (two percent) times the annual Boulder purchases of the university ($16.5 million); the property tax figure was obtained by assuming that the university's geographical area (600 acres) would have developed similar to the non-university lands in Boulder (8,140 acres) had the university not existed. In addition, the university itself provides for $2.8 million in services that the city might otherwise have to supply. This includes nearly $400,000 in security services and $50,000 in fire protection, as well as $1.1 million in health services and $1.1 million in other student services.

Revenues available to the university for the year ending June 1973, totaled $88.6 million, of which the report indicates that about 6 percent came from sources outside the Boulder community.

Other sections of the report deal with the costs of security and crime prevention, the granting of street easements to the city and state, public service contributions by the institution, student teacher assistance in the Boulder Valley School District, and miscellaneous other university sources including community use of athletic facilities, recreation facilities, cultural events, and continuing education.

In conclusion, the report presents an overview indicating the effect on Boulder if the University of Colorado suddenly disappeared: 31 percent of the retail and wholesale businesses would close their doors and 14 percent would begin to locate other places, leaving behind empty buildings and unemployed persons; 4,200 Boulder jobs created because of the $49 million increase in the university budget since 1966-67 would become extinct; approximately one-third of the Boulder employment population (7,300) employed by the university would need to go elsewhere to find a job; the withdrawal of Boulder's largest payroll $49.6 million) would deprive the city of $102 million of university-related community and visitor spending annually, which in turn generated a multiplied effect of $141 million. As a result, the city would suffer an annual loss of $1.2 million in sales tax revenues, $3.7 million in real estate tax revenues, and $350,000 a year in direct payment for city services paid by the university-related community.

Appendices to the report describe research methodology and contain six excellent survey instruments used to determine spending patterns of faculty, staff and students, and the impact of the university on area industries, retailers, and professional and service firms.

67. The Economic Impact of Colleges and Universities on the Boston Area. A study sponsored by Boston College, Boston University, Brandeis University, Harvard University, Massachusetts Institute of Technology, Northeastern University, Tufts University, and the University of Massachusetts at Boston. Prepared by the SDL Systems Research Group of Toronto, Canada. (Available from the Office of the Vice President, Boston University), February 1974. 89 pages.

The report is primarily focused on the cash-flow impact of eight universities -- Boston College, Boston University, Brandeis, Harvard, M.I.T., Northeastern, Tufts, and the University of Massachusetts at Boston -- on the Boston area. The report is supplemented with a more general review of the other 57 institutions of higher learning in the area. The area of impact is the Boston Standard Metropolitan Statistical Area (SMSA) as defined by the U.S. Census. The data refer to the study year 1972. The study's methodology was based in part on the American Council on Education Manual, Estimating the Impact of a College or University on the Local Economy. All data are aggregated; no individual institutions are identified.

Data on student spending patterns came from sample surveys carried out in each university, and from university records. The total sample numbered 6,228 usable returns out of a total full-time student enrollment of 70,000. Input data were edited, weighted with participation rates in each institution, and projected from weekly and monthly to annual bases by multiplication factors of 30 and 8, respectively. Summer school activities were ignored. The survey forms are not included.

The basic finding of the report is that the 65 colleges and universities in the metropolitan Boston area are directly responsible for about $1.3 billion in annual expenditures. The authors conclude that Boston emerges as the leading center of knowledge in the United States -- with more academically based employment and more students in relation to population than any other major metropolitan area.

According to the report, the $1.3 billion in expenditures consisted of $897 million in institutional operating accounts (2.9 percent of the $30.6 billion gross domestic product of the Commonwealth), student expenditures of $156 million, visitor expenditures of $20 million, and construction outlays of $120 million. About 51 percent of expenditure income ($656 million) came from outside of the metropolitan Boston area, making the educational community, in effect, a major local "export" industry.

In the eight universities, 60 percent of the students were from outside of the Boston metropolitan area, many from out of state, and hence financed largely from non-local sources. The corresponding percentage of non-local students for the other 57 institutions was 27 percent.

Of the income sources, slightly more than one-quarter (26.8 percent) of total revenue came from students -- about the same as from research and funds from federal agencies. Private gifts and income from endowments were also a substantial source of income (18.6 percent). Of the major universities' total operating revenues in 1972, 56 percent ($385 million) came from outside of metropolitan Boston.

With 9.6 percent of the employed population, the educational services sector was the largest in Boston and represented a larger share of employment than in any other U.S. metropolitan area, according to the authors. The educational services sector outranked all others in the Boston area in terms of the number of jobs provided, with nearly twice as many people working in education as in the labor-intensive construction industry. The 40,000 employees of the 65 colleges and universities made up about 37 percent of the total employed in educational services.

The report states that using its general constitutional authority, the Massachusetts General Court granted property tax exemptions to educational institutions "to cherish the interest of literature and the sciences and all seminaries of them." The eight major universities owned 2 percent of all land in Boston. According to the report this was a small part of the total Boston land area and a small part of the 42 percent that was tax-exempt. (Government-owned land accounted for 34 percent of Boston's land area and 81 percent of the tax-exempt land.)

Excluding construction, the universities had combined purchases totaling $317 million per year -- 75 percent of it ($238 million) in the metropolitan Boston area.

Equipment, supplies, maintenance, and utilities accounted for $151 million (54 percent) of the eight universities' purchases, with another $62 million (22 percent) spent for "other" unspecified items. Except for equipment, half of which was purchased out of state, expenditures in all categories were overwhelmingly concentrated in metropolitan Boston as follows: supplies (78 percent); equipment (57 percent); job printing (91 percent); maintenance (81 percent); bookstore (31 percent); utility service (99 percent); food and food contract (88 percent); all other (90 percent). Only 4.7 percent of purchases were estimated to have been made in the state but outside the metropolitan area.

The eight major universities had combined assets in cash and marketable securities totaling $2.1 billion. Cash alone amounted to $29 million. Of the balance of liquid assets and marketable securities, $1.9 billion was in revenue-generating portfolio investments. Of the $2.1 billion in combined assets these universities held, nearly $2 billion was in metropolitan Boston.

Surveys of faculty and staff expenditure patterns indicated a total of $195.6 million in local bank accounts: $22.8 million in checking accounts and $172.8 million in savings accounts. The 70,000 students in the eight major universities had bank accounts estimated to total $28 million: $21.8 million in savings accounts and $6.2 million in checking accounts.

The faculty and staff employment of the eight universities that sponsored the study numbered 35,400, with combined salaries of $348.9 million. Ninety-two percent of these employees lived within the metropolitan Boston area, where they paid an estimated $27 million in local property taxes in 1972. Payroll deductions for Massachusetts state income tax came to $13 million. Of their disposable income of $239 million, the universities' employees spent $196 million (82 percent) in metropolitan Boston, $118 million of it on food and housing. Their purchases of durable and non-durable goods (housing and transportation excluded) accounted for $1 of every $75 of metropolitan Boston's retail trade.

The 70,000 full-time students reported spending nearly $156 million, 94 percent of it in the City of Boston and surrounding communities. According to students' statements, a student typically spent about 70 percent of his or her money in the city where he or she studied, the other 30 percent in the surrounding towns.

Surveys conducted for the study indicated that 39 percent of students at the eight major universities were visited by their parents in 1972. Parents from out of town visited, on the average, just over twice a year and stayed about 2.8 days on each visit. Visiting parents' per diem expenditures ranged from $12 to $40+. The surveys indicated that the typical expenditure rate for a party of parents from out of state was $78 per day for an average party of 2.4, or $33 per person. In-state parents traveling from points nearer Boston spent about $45 per day for the same size party, or $19 per person.

The report notes that friends who come to visit students at Boston's eight major universities certainly spent considerably less each day than visiting parents. But they came more often, and they stayed much longer. Surveys conducted for the study indicated that 66 percent of the students averaged five visits by friends in 1972, with the average length almost exactly three days.

The ratio of visits ranged from 1.8 to 3.8 per year per faculty member, member, with an average of just under 3. If these rates were applied to the faculty employment at participating universities, a total of 42,000 academic and professional visitor days emerged for 1972. Since some of these visitors were compensated and since some did not stay overnight, it was estimated that each spent $30 per day for a total of $1.3 million.

With an overall full-time enrollment of 70,500 (excluding part-time students), the 57 other schools had aggregate annual operating expenditures of approximately $200 million and an economic impact about 30 percent of that of the eight universities.

A companion 16-page summary report was also prepared.

C. UNIVERSITY OF CALIFORNIA CAMPUS STUDIES

The following seven studies were all prepared for or by University of California campuses. Each varies in the methodology, level of detail, and number of items studied; most were concerned with measuring economic impact at a single point, although two of the studies included forecasts of economic activity.

68. The University and the City: A Study of Economic Relationships Between the University of California and the City of Berkeley. James W. Harvey. Berkeley, California: Bureau of Public Information, University of California, Berkeley, December 1958. 53 pages plus appendix. (OUT-OF-PRINT)

This is the earliest complete study of economic relationships between a university and its community contained in this bibliography. The report developed from the proposed 40-acre land acquisition program of the Berkeley campus of the University of California.

The report begins with a history of the growth of the University and the City of Berkeley and the University's cultural and recreational contributions to the city; following are sections which summarize the campus long range development plan, city reports on it, and a section on the economy of the city.

The report describes the city as predominantly residential in character, with a substantial industrial sector, and well-developed business and commercial activities. The report claims the city is a balanced community in that about as many people enter the city to work each day as leave it to work elsewhere.

The campus, in March 1957, was the largest employer in Berkeley with 9,925 persons on the payroll; this was 22 percent of the estimated 45,800 persons employed in Berkeley and the adjacent City of Albany. Collectively these employees received a gross income of $47 million and a net income of $37 million. Of the University employees, 58 percent lived in the City of Berkeley.

The report indicates that in Spring 1957 student enrollment at the Berkeley campus was 16,939. This was 6,000 less than the peak enrollment of 23,145 for the Fall semester 1948, and about 8,000 below the steady state enrollment of 25,000 which was expected during the decade of the 1960's. Of the enrollment, 63 percent lived within ten blocks of the campus and made up the 18 percent of the estimated 55,200 consumer spending units in the City.

The report notes that 82 percent of the city's revenue comes from real and personal property taxes, sales taxes, business licenses, permits and fines; County street improvement funds account for two percent of the budget; the State, through subventions back to the City, provides for 15 percent of the budget. The report claims that the decline in the relative importance of property tax from 68 percent of the main revenue source of the city in 1945-46 to approximately 46 percent in 1955-56 was a fairly general phenomenon.

The report points out that there is a likelihood of a substantial increase in the property tax base in Berkeley due to an increase in assessed valuations while at the same time the amount of tax exempt property in Berkeley will also increase. The report explains that the University accounts for 19 percent of the tax exempt property in Berkeley; the City, including the Unified School District, streets, and miscellaneous areas accounts for 75 percent of the tax exempt property, nongovernmental institutions, two percent; the municipal utility district, one percent; the Federal Government, one percent; and, the State of California, two percent.

The report cites that as a result of the change in the 1950 U. S. census, students for the first time were enumerated at their college address instead of at their home address. Because students residing in Berkeley were ten percent of the total population at the time of the 1950 census, city receipts from State allocated revenues were increased by approximately $100,000.

The report includes an appendix describing payments made by U. S. universities for municipal services based on the results from a 1957 questionnaire survey sponsored by the City of Berkeley Planning Department and sent to 80 cities containing 99 universities.

69. The Community Impact of the University of California's Berkeley and Santa Cruz Campuses. A staff report prepared by Ira Stephen Fink, University Community Planner. Berkeley, California: Office of the Vice President - Physical Planning and Construction, University of California, April 1967. 30 pages. (OUT-OF-PRINT)

The study had two principal purposes: (1) provide specific information about the economic impact upon the community as a result of expenditures by the University and by University-oriented persons, and (2) provide a forecast of retailing and service activity from 1966 through 1975. It was based upon results of a questionnaire survey and research conducted by Dr. David Bradwell.

The report concludes that the total dollar volume of expenditures by Berkeley students, faculty, and staff, the campus itself, campus auxiliary enterprises, and campus visitors, amounted to approximately $318 million in 1965-66. At Santa Cruz, the corresponding figure amounted was $16.9 million. Non-housing expenditures by 26,471 Berkeley students were estimated at $75.9 million, of which $44.2 million was in the City of Berkeley; for the 11,588 faculty and staff, the corresponding amount was $116.3 million, of which $44.0 million was in the City of Berkeley.

The report states that "the construction of a campus requires an investment in community supporting activities exceeding the construction investment in the campus itself." It was estimated that the students, faculty, and staff supported residential and commercial real estate valued in excess of $400 million within the San Francisco Bay Area.

An annual average increase of $1 million per year was forecast for individual non-housing expenditures between 1965-66 and 1975-76 at Berkeley. This reflected an increase in the student body of 1,000 and a changing student mix from 62 percent undergraduate/38 percent graduate to 51 percent undergraduate/49 percent graduate. The corresponding forecast for non-housing expenditures at Santa Cruz, reflecting increases in the student body from 652 to 7,500 and in faculty and staff from 283 to 896, averaged almost $2 million per year--from $3.4 million to $22.3 million.

70. University of California, Irvine, Economic Impact Study. Prepared by Ashley Economic Services. Irvine, California: Office of Physical Planning and Construction, University of California, Irvine, December 1973. 100 pages plus appendices. (OUT-OF-PRINT)

This report presents an analysis of the fiscal/economic impact of the University of California, Irvine, on the adjacent City of Irvine and on Orange County, California. Included is a study of revenue sources resulting from University-related economic activities such as property taxes from staff and student residents, gas taxes, and building permit and related fees. The report uses an employment multiplier to estimate total economic effect.

The report assumes that the campus will grow from 8,333 students in 1973 to 10,200 by 1985. Similarly, faculty and staff would increase from 2,350 to 2,837 over the same period.

The study states that through 1973, a total of 12,140 jobs in Orange County were attributed to the economic impact of the campus. It is estimated that 830 additional jobs would be attributed to the campus between 1973 and 1974, with increases of 1,180 and 1,240 during the following two five-year intervals through 1984.

The report estimates that for every 1,000 students at the campus, 1,044 households with an income of $14.7 million are generated. This results in a demand for 540 owner occupied housing units and 500 rental units. The 1,000 students also create an estimated demand for 92,300 square feet of retail space, 21,500 square feet of office space, and 7.5 hotel rooms. The total community investment per 1,000 students is estimated to be $28.5 million.

To analyze existing and potential student retail expenditures, a survey of 200 students was conducted. From the spending survey it was estimated that students spend $8.7 million: shopping goods ($3.3 million), food and beverages ($2.4 million) and convenience goods ($3.3 million). Student expenditures were estimated to rise from $8.7 million to $11.7 million from 1973 to 1985 with the increase of expenditures in the City of Irvine rising from $2.0 million to $2.7 million.

The report also provides a computer generated analysis of the cost and revenues for each type of city facility and service activity as a result of the presence of the campus. Based upon current per capita operating standards in 1973 the presence of the campus generated municipal revenues of $106,000 with total municipal costs of $64,000 or a surplus to the municipality of $42,000. By 1985, annual campus population generated revenue is expected to increase to $146,000 with costs increasing to $59,000, for a surplus of $87,000. The authors conclude that the campus provides a positive fiscal impact on the City of Irvine.

The report estimates that the total operating budget of the campus in 1973 was $8.6 million and would increase to $9.7 million by 1980 and $10.5 million by 1985, based upon average operating expenditures per student of $1,030. This figure excludes construction expenditures.

Appendices to the report describe the results of the student survey and the multiplier concept used in the impact analysis methodology.

71. Technical Supplement: Special Impact Analysis, University of California, Riverside and March Air Force Base. Prepared by Development Research Associates for the City of Riverside and the University of California, Riverside. Los Angeles, California: Development Research Associates, February 1974. 57 pages. (OUT-OF-PRINT)

The report analyzes the economic impact of the University of California, Riverside and March Air Force Base. No special data collection was undertaken, all estimates are from secondary sources.

It was indicated that the University is one of the major employers in the City of Riverside, directly providing more than 1,600 full-time jobs and an equal number of part-time positions. The report estimates that the total direct impact on the local economy is more than $24 million, which, after multiplier effects, results in a total contribution of between $48 and $72 million each year. In 1972-73, the campus full-time employment was 1,717; part-time employment totaled 1,142. Enrollment was 5,235, with about 22 percent graduate students.

The campus was found to employ more persons than any industry in Riverside except transportation equipment, and at a much higher average wage rate than all groups except printing and publishing.

In 1971-72, campus payroll expenditures totaled $24.8 million. Campus non-student faculty and staff disposable income totaled $17.0 million. Approximately 12 percent of all disposable income was estimated to be savings and out-of-area purchases such as travel, investments, mortgage payments to non-local banks, and mail order shopping; after a further series of deductions to account for employees who live out of the area, it was estimated that 75 percent of the disposable faculty and staff income of $12.9 million was spent in the local area.

In 1971-72, students received $4.1 million in grant funds and an additional $415,000 in Federal and State Work Study Program monies. It was assumed that about 60 percent of these funds were spent in the Riverside economy.

In 1972-73, the campus paid nearly $500,000 to the City of Riverside for power, water and sewer services. Additional payments totaling $300,000 were made to other local utilities. Visitors totaled 16,120 visitor days and spent approximately $250,000 annually.

The campus contribution amounted to nearly four percent of the total annual sales in the Riverside area and campus related expenditures were responsible either directly or indirectly for supporting 400 retail and service jobs.

Other sections of the report deal with contributions of the campus to the local community including description of activities of the various research stations, the programs provided by University extension, and other community service activities.

72. The Economic Impact of the University of California, San Diego on Metropolitan San Diego. A staff report prepared by Lemuel C. Shepherd III. San Diego, California: Office of the Assistant Chancellor - Planning, University of California, San Diego, August 1974. 28 pages. (OUT-OF-PRINT)

The intent of the study was to estimate the economic contribution the University of California, San Diego makes to the local economy and to express this impact in terms of a specific annual sum of money. The report follows the simple ACE expenditure model and was based on data maintained by the University in its regular course of business and did not require the generating of special data collection efforts. During the academic year 1973-74, the campus employed 5,950 non-student staff and academic employees, and 2,100 student employees; enrollment totaled 7,726 students.

The economic impact to the campus was estimated to be $85.7 million from all sources. This impact represented slightly less than 60 percent of the campuses $146.8 million fiscal year budget. The University was indicated to rank as the sixth most valuable industry in San Diego County.

It was estimated that the University paid $78.9 million in wages and salaries, of which 60 percent or $47.4 million flowed into the local economy.

The report provides estimates of annual student expenditures as follows: Single students living on-campus ($2,625); married, on-campus ($5,220); single, renting ($3,750); married, renting ($5,640); single living at home ($2,125).

The reports indicate that approximately 60 percent of the wages and salaries were spent in the community; 21 percent of all other day-to-day operating expenditures of the University were also paid to San Diego businesses for goods and services. By contrast, 83 percent of all construction and equipment purchases were spent locally.

The report states that normally the operating and plant expenditures budget is the gage of how much an institution spends annually and is the most important determinant of impact on a local community. However, the relationship between the size of the budget and the size of the student body varies considerably. For example, the University of California, San Diego and the University of Denver (Bibliography Item 61) have similar size student bodies, yet the San Diego campus budget was five times that of the University of Denver.

73. The Economic Impact of the University of California, Santa Cruz on the Santa Cruz Area Economy. Santa Cruz, California: Office of Physical Planning and Construction, University of California, Santa Cruz, September 1974. 88 Pages.

The report identifies and measures the cost and benefits resulting from the presence of the University of California, Santa Cruz during the academic year 1973-74. There were 5,105 students and 1,910 full and part-time faculty and staff. About 50 percent of the students and 10 percent of the faculty resided on campus. The report was generally based upon The American Council on Education economic impact study manual.

The report claims that the faculty and staff employment income generated enough economic activity to support 2,940 local employees creating a total induced population of 17,000 in Santa Cruz County.

Students, faculty, staff, and their households were estimated to cost local government agencies $4.0 million to provide for public education and municipal services, while their contribution to local government revenues was estimated to be $4.7 million. In per capita terms, local government costs were $415 while local government revenues from the University related persons was $484.

The report indicates that the Santa Cruz County economy had not advanced since 1967. The chief signs of this stagnation were an annual per capita real business volume which remained at about $3,900 and a persistent high unemployment rate averaging 8.4 percent per year.

Survey results are based upon a questionnaire returned by 141 faculty and staff (7.4 percent) and a random sample interview of 248 students (4.7 percent). Copies of the survey questionnaires and an explanation of the survey methodology are included in the appendix.

University income totaled $22.8 million; of this, state appropriations amounted to $14.0 million, students fees $0.4 million, special fund income $7.8 million, and special funds including Regents Program funds, $0.6 million. A description of each of 11 fund sources used in the current operation of the campus is included.

According to the report, the largest single component of faculty and staff income was the $16.0 million in salaries paid by the campus. Non-University employment by faculty, staff, and/or members of their immediate families added another $3.0 million, while other income sources including consulting fees, interest and benefit payments totaled $2.1 million. Total gross income of campus faculty and staff was $21.1 million with total disposable income of $18.8 million.

Students earned $1.5 million in on-campus employment and $0.5 million in local off-campus employment. Income services (dividends, welfare, etc.) contributed an additional $2.1 million while parental support of $4.8 million and grants-in-aid of $3.0 million gave an annual total income of students of $11.9 million. Total student expenditures, including University fees, were $15.4 million. The difference of $3.5 million between income and expenditures is probably accounted for by summer earnings of students which would imply an average income of $993 per student.

The Santa Cruz campus expenditures totaled $24.1 million of which the largest amount was wages and salaries of $17.5 million; the report indicates that during the first ten years of the campus operation, approximately $54.7 million was awarded in construction contracts with 51 percent going to local firms.

Faculty and staff households spent a total of $18.1 million of which 78 percent was spent within Santa Cruz County. Because 98 percent of the faculty and staff resided locally there was an average "propensity to spend locally" by faculty and staff households of 80 percent. The most important single category of expenditures was for food and beverages, which amounted to 22 percent of the total expenditures; mortgages and rents also accounted for 22 percent; books and supplies, 3 percent; transportation, 6 percent; entertainment, 13 percent; apparel, 8 percent; personal and business services, 3 percent; furniture and household maintenance, 8 percent; utilities, 4 percent; and all other, 11 percent.

Data obtained from faculty and staff questionnaires indicated an average visitor rate of approximately two guests per month with an average visitor stay of 3.2 days. Total faculty and staff visitor days amounted to 144,500. Student visitor days, totaled 368,200. Together these visitors spent $1.5 million.

74. The University of California, Santa Barbara and the Santa Barbara Area Economy. Santa Barbara, California: Office of Architects and Engineers, University of California, Santa Barbara, 1974. 54 pages, plus a separate 92-page appendix.

This report studies the economic interrelationships between the University of California, Santa Barbara and its local communities, based on surveys taken in 1973. In 1972-73, there were 11,828 students, and

2,648 full-time equivalent faculty and staff. According to the report the University is the fourth most important element of the Santa Barbara area economy following research and development industries, property and pension income, and tourism.

The study analyzed impacts in the following five areas: (1) local economic activity, including expenditures by the University faculty, staff, students and visitors; (2) population impact, measuring the number of local employees and their dependents who are indirectly supported by income generated from University economic activity; (3) local government economic relationships; (4) construction expenditures; and (5) location decisions of research and manufacturing firms.

The report indicates that the campus was largest employer in the Santa Barbara area with a 1972-73 operating budget of approximately $47 million; of this, $36 million was payments for salaries and benefits, $4 million for locally purchased goods and services, and $7 million for non-local expenditures. The sources of this income included $30 million from the State of California, $5 million from the Federal Government, $5 million from student fees, $3 million from parking and student housing, $3 million from endowment income, gifts and grants, and $1 million from other services and sales.

To calculate employee expenditures a survey with 600 respondents was undertaken. From University records, it was determined that there were 4,988 persons on the payroll in 1973 including 2,036 students working part-time, 652 were other part-time employees, and 2,310 were full-time employees. Of the full-time employees, 126 were married to other employees and 40 other families did not reside in the area. Thus there were 2,184 net family units. Among the non-student part-time employees, there were 522 net family units.

Based on the assumption that campus income was responsible for all family expenditures except that due to income received from an employer other than from the campus, 84.8 percent of all full-time employees' expenditures were considered to be due to the presence of the campus, as were 63.8 percent of the part-time employees' expenditures. Collectively these expenditures amounted to $23.8 million. Of the total full-time faculty and staff expenditures, $7.5 million (31 percent) were for housing costs, $3.8 million (16 percent) for groceries, $1.6 million (7 percent) for household furnishings and maintenance, $1.5 million (6 percent) for transportation costs, $1.4 million (6 percent) for medical and dental services, $1.3 million (3 percent) for utilities, $1.1 million (5 percent) for clothing, and the remaining 25 percent for restaurants and entertainment, savings, and other items not listed.

On the average, less than 10 percent of all purchases by full-time faculty and staff were made outside the south coast area (the genral area extending approximately 15 miles east and west of the City of Santa Barbara). During 1973, full-time faculty and staff purchased 550 new and used automobiles, and over 140 homes.

Among the students, $24 million was spent as follows: $11.0 million (46 percent) for housing, $4.2 million (18 percent) for groceries, $1.7 million (7 percent) for books and supplies, $1.6 million (7 percent) for utilities, $1.5 million (6 percent) for transportation, $1.2 million (5 percent) for restaurants and food away from home, $1.0 million (4 percent) for entertainment and $1.8 million (7 percent) for all other expenditures. On the average, married students spent $450 per month; single students who paid rent or mortgages, $189; and, single students who paid room and board, $206. Of total student non-housing expenditures, 16 percent was spent on the campus, 22 percent in the adjacent community of Isla Vista, 42 percent in Goleta, 16 percent in other south coast cities, and 4 percent out-of-the area.

The report estimates that visitors to the campus spent over $2.7 million annually. This included more than 23,000 visitor days of persons who stayed in local motels or hotels and spent an average of $30 per day, approximately 117,000 visitor days by overnight guests whose average expenditures were $10, and, 162,000 visitor days for persons who were in the area for less than eight hours and spent approximately $5 per day.

The report estimates that for each $1,000 economic base income spent for local goods and services, the increase in local service activity is 1.56 or, a total of $1,560, with service activity employment increasing by 0.0951 persons.

Using the above multipliers and based upon first round local expenditures of approximately $43.4 million it was estimated that these expenditures resulted in $67.5 million of additional local service activity and 4,125 jobs in addition to the direct employment by the University. Collectively, and including University faculty/staff and their families, the total induced population due to the presence of the campus amounted to 24,047 persons, including the 11,300 enrolled students.

It was estimated that, in 1973, the $1.8 million of construction expenditures resulted in 40 full-time construction jobs using the following assumptions: (1) 90 percent of labor force resided in the south coast, (2) the construction dollar evenly split between construction and materials, (3) half of the non-labor expenditures were for goods and services provided by local firms; (4) an average construction worker cost was $11 per hour of which $8 was the worker's wages; (5) a work year consisting of 264 days; and (6) 60 percent of a construction worker's income spent locally.

The report contains considerable analysis of the economic relationships between the campus and local school districts, county sheriff, and county fire department. The conclusion is that except where agency has to provide direct service to the campus itself, the revenues are of a similar order of magnitude to the costs.

Of considerable interest in this study are the results of a survey to determine the importance of the Santa Barbara campus in the location decisions of light industrial and research firms. These firms have great flexibility in choosing their locations because they are not tied to a local market or specific sources of raw materials. Executives of

35 of the larger firms (60 or more employees) were interviewed and 85 of the smaller firms completed mail questionnaires. Recognizing that there was more than one reason for a firm to locate in the south coast, 76 percent of the largest firms indicated that the general climate of the area, the attraction of personnel, and the fact that it was a good place to live and work was the reason for locating in the south coast area; 41 percent indicated that the proximity to the campus was a reason for locating in the area. The proximity of the campus was a single feature most often rated as favorable by both large and small firms and least often rated as unfavorable.

Another measure of importance of the campus to local firms was the use these firms made of the University's facilities and personnel. Eighty percent of the large firms and 60 percent of the small firms used these resources. The library was the campus resource mentioned as most often used by these firms. Fifty-six percent of the large firms and 25 percent of the small firms had official programs to encourage their employees to attend classes on the campus. Together some 522 persons studied at the campus since these programs were initiated.

The separate appendix describes the models used and includes copies of the questionnaires and an evaluation of them. Also included is a log of the steps in the study, staffing patterns, and cost.

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